

# THE CONSTRUCTOR

OFFICIAL PUBLICATION OF THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA



Volume XXXIII

NOVEMBER 1951

Number 11

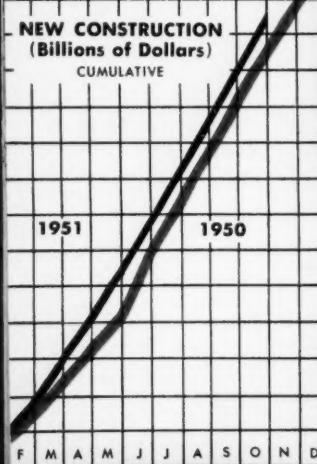
• BUILDINGS

• HIGHWAYS

• AIRPORTS

• RAILROADS

PUBLIC WORKS

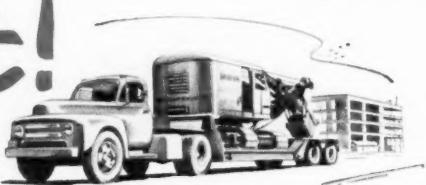
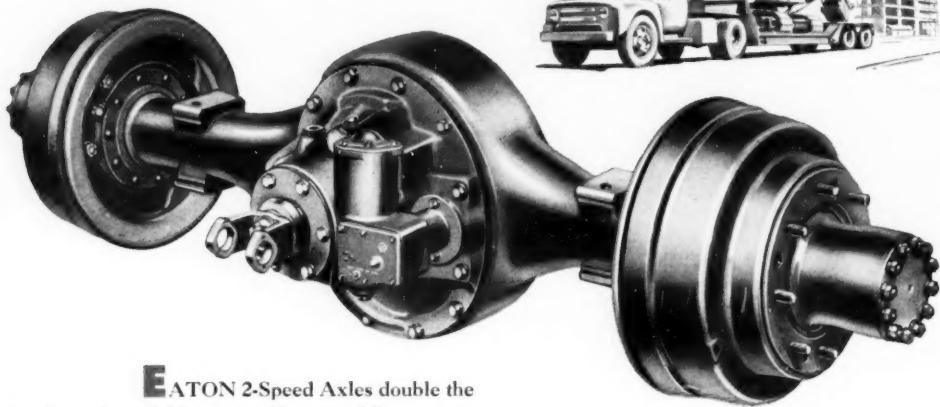


Allocations to Allow \$29 Billion Volume—21

Roundup of Construction Legislation—30

Contractors' Views on Modular Building—36

# Eaton-equipped Trucks haul more, faster, longer, at lower cost!



**E**ATON 2-Speed Axles double the number of available gear ratios, providing a combination of power and speed that makes for faster trips with full loads; more pay-load miles at lower cost per mile. Drivers select the ratio best suited to road, load, and traffic conditions—a gear ratio for maximum efficiency, economy, safety, and maneuverability. Using the right gear ratio for each situation permits engines to run in the most efficient and economical speed range. Stress and wear are reduced, not only on the axles themselves, but on engines and all power transmitting parts; adding thousands of miles to vehicle life, keeping trucks on the job and out of the repair shop. Eaton Axles more than pay for themselves—in lower maintenance and operating costs, and in higher trade-in value. For complete information, see your truck dealer.

*Axle Division*  
**EATON MANUFACTURING COMPANY**  
CLEVELAND, OHIO

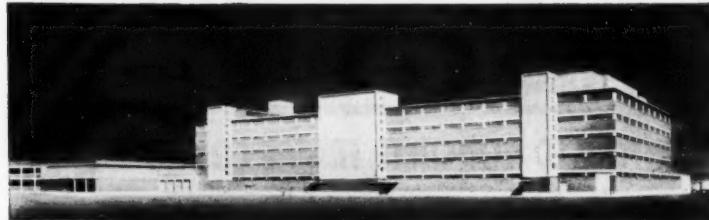
**These Eaton Features Keep Trucks  
on the Job, Reduce Upkeep, Add  
Thousands of Miles to Axle Life**

- **PLANETARY GEARING**
- **FORCED-FLOW LUBRICATION**
- **RUGGED CONSTRUCTION**

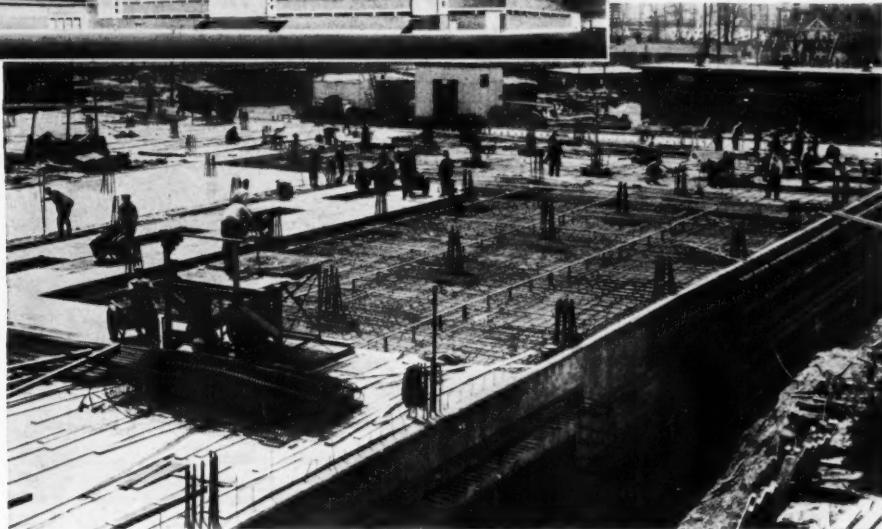
**EATON**  
*2-Speed Truck*  
**AXLES**



**PRODUCTS:** Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater-Defroster Units • Snap Rings • Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers



Abbott Laboratories' big new manufacturing addition in North Chicago, Illinois. Naess & Murphy, Architects. John Griffiths & Son Construction Co., Contractors. Construction steels including Hi-Bond reinforcing bars from Joseph T. Ryerson & Son, Inc.



## Ryerson Reinforcing Service Helps Build New Drug Plant

Here Ryerson construction steel service will help keep the nation healthy. Reinforcing bars, cut and bent to specification, spirals, wire fabric, reinforcing accessories—all are being shipped from Ryerson stocks to complete this big drug products plant addition on schedule.

When originally contracted for, before Korea, supplying such a job was routine at Ryerson. But today, peak demand for steel has drastically reduced our stocks of reinforcing materials. So we can't handle every construction steel order and inquiry, much as we would like to.

However, when we can meet your requirements, we're able to take over the complete job from setting diagrams and bending details to dependably scheduled deliveries. Every bar is permanently identified with a metal tag for easy placement. And all Ryerson reinforcing bars meet or

exceed the new ASTM specifications for height and spacing of ribs.

So, despite shortages, we suggest you call us when you need reinforcing steel service. We'll do our best to help you.

### PRINCIPAL PRODUCTS

**REINFORCING**—Bars, wire fabric, spirals, etc.

**STEEL FORMS**—For concrete joist construction.

**STRUCTURALS**—Channels, angles, beams, etc.

**PLATES**—Many types including Inland Safety Plate.

**BARS**—Carbon and alloy, hot rolled and cold finished.

**SHETS**—Hot and cold rolled, many types and coatings.

**TUBING**—Seamless and welded, mechanical and boiler tubes, structural tubing, etc.

**STAINLESS**—Allegheny sheets, plates, bars, tubes, pipe, pipe fittings, etc.

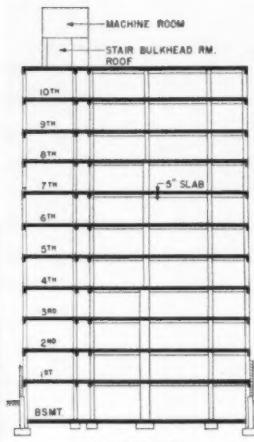
**MACHINERY & TOOLS**—for metal fabrication.

# RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS: NEW YORK • BOSTON • PHILADELPHIA • DETROIT • CINCINNATI  
CLEVELAND • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO

# 5 Key Advantages

## EXPLAIN SWING TO REINFORCED-CONCRETE FRAME CONSTRUCTION



### JOB DATA

#### Average Typical Floor

Superficial floor area ..... 7,100 sq. ft.

Contact form area ..... 11,000 sq. ft.  
(1.55 sq. ft. per sq. ft. area)

Reinforcing steel ..... 34,600 lb.  
(4.9 lb. per sq. ft.)

Concrete ..... 160 cu. yd.  
(averaging 7.3 in.  
thickness per sq. ft.)

Rub and patch area ..... 6,900 sq. ft.



### James A. Bland Houses—Concreted with 'Incor' 24-Hour Cement —Another Example of Progress in Design and Concreting Methods

● This New York City Housing Authority project in Flushing, N.Y., again demonstrates that multi-story concrete frames, with their inherent fire-safety, are being erected at less cost than traditional types, at equal or greater speed—with these results:

1. Typical column, beam and slab arrangement, with all beams over partitions, columns generally of same dimensions from floor to roof—saves on form-work and in placing reinforcing steel;
2. No beams in rooms—reduced story height without reducing cubage;
3. Reduced height of partitions and overall exterior masonry walls—shorter vertical utility runs;
4. Columns placed off line in either direction—greater freedom for architect;
5. Forming floor slabs with plywood—eliminates need for plastered ceilings.

### An Assist from 'Incor' 24-Hour Cement

Designed for concrete, the Contractor lays out the job for assembly-line speed, making fullest use of dependable 'Incor' high early strength: Minimum heat protection in cold and cool weather; stripping schedules quickly regained after rain or other delay—maximum erection speed with minimum form investment. On James A. Bland Houses, CORBETTA CONSTRUCTION CO., INC., concreted 55 floors in 100 working days, with five form-sets—one set for each 10-story building.

**JAMES A. BLAND HOUSES, Flushing, N. Y.**  
Owner: NEW YORK CITY HOUSING AUTHORITY  
Architects: CHAPMAN, EVANS & DELEHANTY  
Structural Engineers: SEELYE, STEVENSON & VALUE  
Ready-Mix 'Incor' Concrete:  
COLONIAL SAND & STONE CO., INC.  
General Contractor: CORBETTA CONSTRUCTION CO. INC.  
all of New York City

Plan apartments, schools, hospitals, hotels, industrial buildings with 'Incor' concrete frames, for fire-safety and stability, lower first-cost, less maintenance. \*Reg. U. S. Pat. Off.



## LONE STAR CEMENT CORPORATION

Offices: ABILENE, TEX. • ALBANY, N.Y. • BETHLEHEM, PA. • BIRMINGHAM, BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS, KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK, PHILADELPHIA • RICHMOND • ST. LOUIS • WASHINGTON, D.C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 17 MODERN MILLS, 125,000,000 SACKS ANNUAL CAPACITY

# The CONSTRUCTOR

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BUILDINGS • HIGHWAYS • AIRPORTS      RAILROADS • PUBLIC WORKS



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### COVER

Taking advantage of a high tide at 2 a.m., Bethlehem Steel Company bridge men hoisted a giant 173-ton haunch girder from a barge to the top of a 103-foot pier of the Passaic River Bridge, an important link of the New Jersey Turnpike at Newark. This month's spectacular cover photograph was taken at sunrise while the floodlights which illuminated the work were still on the derricks.

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C.I.T. CORPORATION  
*Industrial Financing*  
ONE PARK AVENUE, NEW YORK 16, N.Y.

S. D. MADDOCK  
PRESIDENT

November, 1951

Dear Mr. Contractor:

After a reading of reports, prophecies and downright guesses from all sides on the construction business, at least two facts would seem to emerge clearly: (1) The backlog of proposed construction work not yet under contract is extremely large (some sources put it as high as \$58.8 billion); and (2) The nation's urgent need for new construction is growing at an ever-increasing rate.

These facts are about as solid a reassurance for expanding facilities as one is likely to find in these times.

If you are in the market for funds to expand your facilities or to replenish your working capital, we can act quickly on your application. Funds can be advanced to purchase new equipment or against equipment already owned by you.

Any one of our offices listed below is ready to work on your application.

Yours truly,

*S. D. Maddock*

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ATLANTA

1007 Preston Ave.  
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416 W. 8th St.  
LOS ANGELES

660 Market St.  
SAN FRANCISCO

**Material allocations** for 1951 fourth quarter and 1952 first quarter are sufficient to support construction at the annual rate of \$29 billion, National Production Authority reported. (Page 21)

**Structural steel** allotments to the construction industry for the 1951 fourth quarter total about 890,000 tons, and for the 1952 first quarter, about 900,000 tons, roughly 63% of 1.4 million tons available for the latter period. (Page 23)

**Steel allocations** for schools and hospitals are being examined by Defense Production Administration authorities, after requests by Congress to increase steel, copper and aluminum allotments for school and hospital construction. Shortages for these programs were severely criticized in recent House committee hearings. (Page 42)

**More steel for highways** was urged by American Association of State Highway Officials whose members asked that highway steel be increased to 2% of national production and that priority for highway construction equipment be increased because of importance of highways to national defense. (Page 45)

**Need for a more realistic** estimate of steel requirements was cited by iron and steel industry representatives in a report submitted to Defense Mobilization Director Wilson which stated that consumers were asking for over 190% of estimated supply in some cases. Mr. Wilson and Defense Production Administrator Fleischmann have announced that the report is being studied and many recommendations are being put into effect. (Page 22)

**Taft-Hartley Act was amended** for first time by Public Law 189 which permits use of union security agreements without prior elections provided certain conditions are met. A.G.C. Assistant Managing Director J. D. Marshall maintains the labor law change will have no apparent immediate effect upon general contractors. (Page 27)

**The 82nd Congress adjourned** Oct. 20 (to reconvene January 8) after passing appropriation bills totalling over \$91 billion for peacetime spending on defense and other projects. A complete tabulation of major laws affecting construction passed during the 1st session of the 82nd and special session of the 81st Congress begins on page 30.

**Military public works** appropriation passed providing \$4.1 billion for Army, Navy, Air Force and Atomic Energy Commission projects with money divided as follows: Army, \$1 billion; Navy, \$800 million; Air Force, \$2 billion; and Atomic Energy Commission, \$200 million. (Page 29)

**Army civil functions** appropriation finally passed after two months of conference debate, with \$597.3 million for rivers, harbors and flood control projects: flood control construction, \$353.2 million; rivers and harbors construction, \$125.2 million. (Page 30)

**Transportation of property tax** has been changed to abolish the tax on transportation of earth, rock, or other excavated material within boundaries of, or in the course of, a construction project to a place within the boundaries of, or adjacent to, the project. (Page 29)

**Future unemployment** in the construction industry was predicted by members of the Joint Cooperative Committee of the American Institute of Architects and the A.G.C. who asserted that owners' failure to go ahead with plan preparation because of control-caused uncertainties as to commencement and completion of projects will create a serious lag in construction starts when normal schedules are resumed. (Page 41)

**Modular coordination survey** conducted by the A.G.C. shows varying opinions of general contractors as to the method's effectiveness in decreasing costs with about one in 10 replies giving qualified endorsement. (Page 36)

**Construction machinery's** essentiality to defense mobilization is subject of a brochure issued by the Construction

Industry Manufacturers Association showing that deliveries for military and defense uses have increased by over 35% while highways are getting 33½% less, and most other construction is getting over 50% less than normally. (Page 56)

**National Safety Conference**, Construction Section, heard John A. Volpe, Volpe Construction Co., A.G.C., describe "100 Ways to Save a Buck" through accident prevention, and George M. Schmeltzer, executive director, Pennsylvania Builders Chapter, A.G.C., outline public relations advantages of safety programs. (Page 61)

**Force account limitation** as a permanent policy of the Bureau of Reclamation, was urged by the National Reclamation Association during its recent convention in Texas. (Page 50)

**Improving apprentice training** for cement masons was the subject of the 1st meeting of the National Joint Cement Masons Apprenticeship Committee which noted lack of local programs, incomplete data for establishing training criteria, and insufficient financial support. (Page 34)

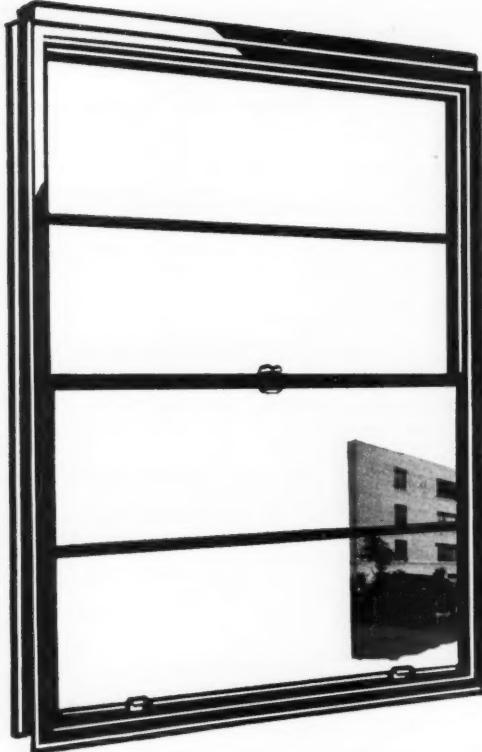
**Renegotiation Board's** first order extends until March 1, 1952, the time allowed for filing of financial statements by contractors and subcontractors whose fiscal years end prior to Nov. 30, 1951. (Page 29)

**Plans for 40% power plant expansion** are being reviewed by Defense Production Administration to determine to what extent new plants will be needed to meet defense production needs. (Page 51)

**Price regulation** for the construction industry, several months in the making, was signed November 5 for announcement later.

**Certificates of necessity** for over 4,000 new or expanded defense production facilities costing about \$10 billion were approved under accelerated tax amortization program through Nov. 1. A quarter to a third of the investment will be for construction. New rules are to be adopted for processing applications.

**TRUSCON...a name you can build on**



**better learning through better light...**

- Teacher and pupil alike benefit from the clear, large-expance, light-transmitting areas in Truscon Series 138 Double-Hung Steel Windows, wherever used in institutional or residential structures. The development of modern architectural styling with these handsome Truscon Windows, and the generous use of Nature's free sunlight and fresh air made possible by these steel units, is illustrated in the Chicago University Faculty Apartments, Chicago, shown above.

*Philip B. Maher, Architect • W. J. Lynch Company, Contractor*

Major construction features of Truscon Series 138 Double-Hung Steel Windows are: welded tubular construction of heavy-gauge steel; quiet, easy operation controlled by motor-type spring balances; complete factory weatherstripping; wide range of types and sizes, including sill-ventilator styles, to meet every residential, school, institutional, and commercial need.

See Truscon's complete catalog in "SWEET'S" for full information on all Truscon *Mark of Merit* Products.



**TRUSCON STEEL COMPANY** YOUNGSTOWN I, OHIO  
*Subsidiary of Republic Steel Corporation*

## A Series of Graphs Outlining the Construction Trend

Compiled by The Associated General Contractors of America

### TREND OF CONSTRUCTION COSTS

The average of construction costs in the principal construction centers of the United States for October stands at Index Number 379, according to the A.G.C. Index. The cost figure for October 1950 was 371. The 1913 average equals 100.

### WAGE AND MATERIAL PRICE TRENDS

The average of wages in the principal construction centers of the United States stands at 509 for October. One year ago the average stood at 491. The average prices paid by contractors for basic construction materials for October stands at Index

Number 298. The average a year ago stood at 291. The 1913 average, again, equals 100.

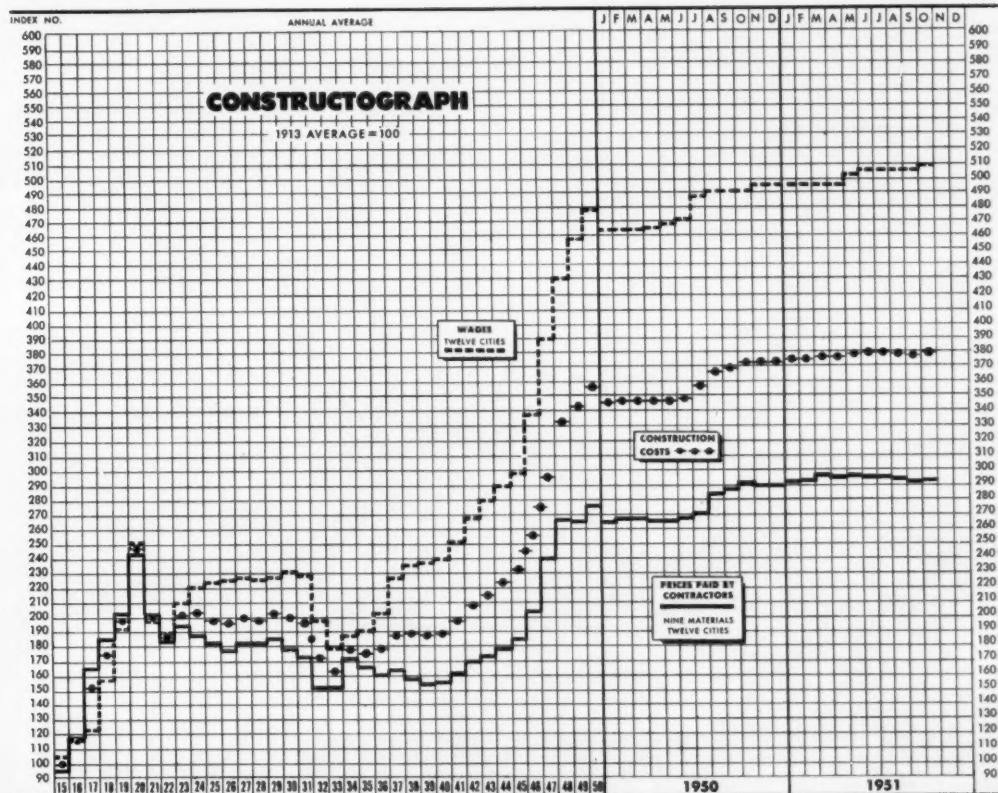
### CONTRACT AWARDS IN 37 STATES

The volume of contracts awarded during September (Index Number 218, based on 1936-1938) is a decrease of 35 points from August, and a decrease of 46 points from September 1950.

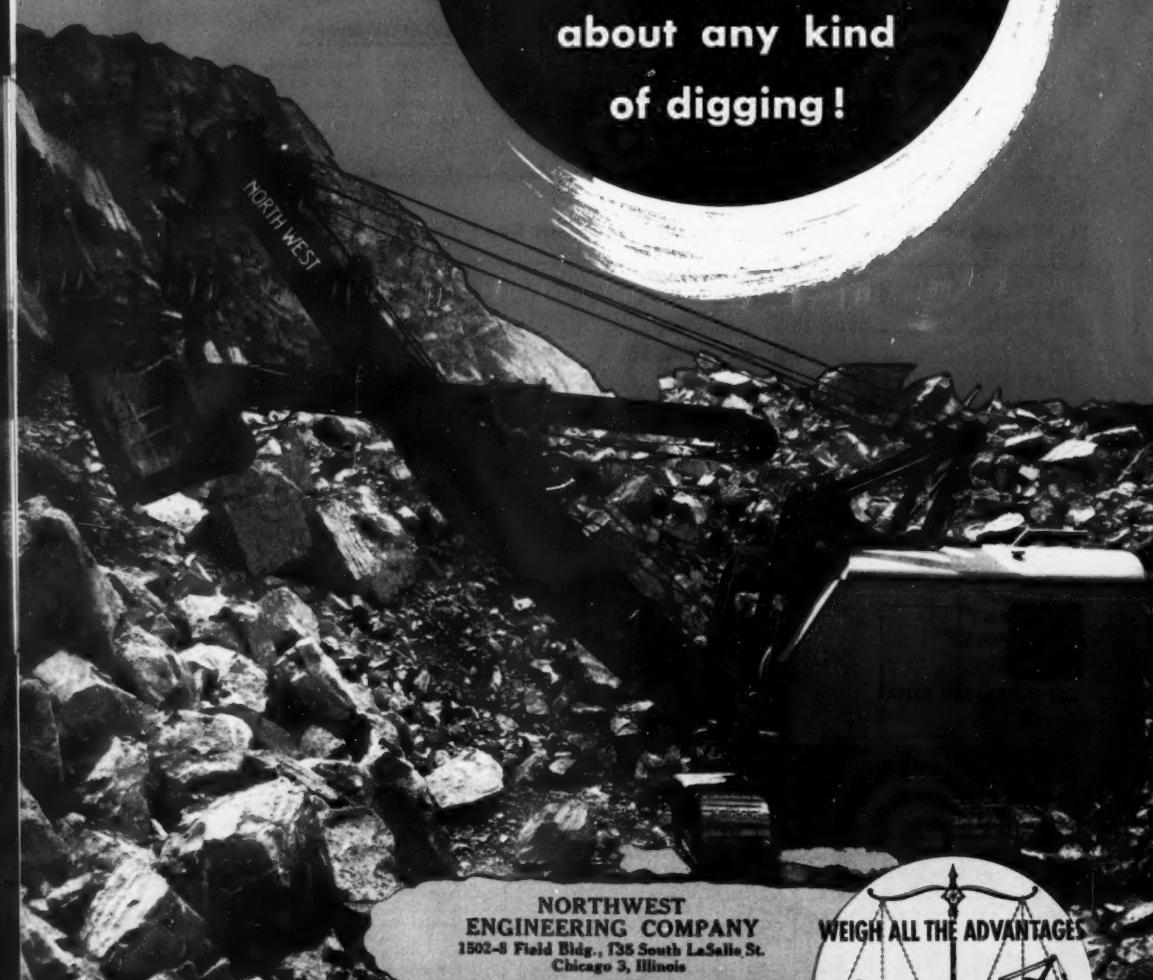
### REVENUE FREIGHT LOADINGS

Revenue freight loaded during the first 42 weeks of 1951 totaled 32,956,329 cars. For the same period in 1950, loadings amounted to 31,142,881 cars. This represents an increase of 5.8 per cent.

### ● Wage, Material Price and Construction Cost Trends



If you have a  
**REAL ROCK SHOVEL**  
you never have to worry  
about any kind  
of digging!



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Chicago 3, Illinois

**NORTHWEST**

CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

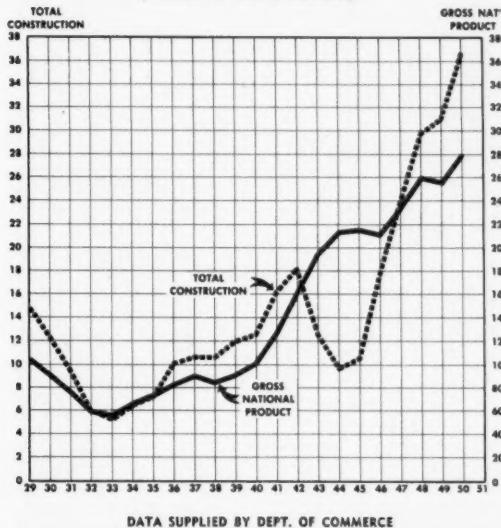
WEIGH ALL THE ADVANTAGES



WHETHER SHOVEL, CRANE, DRAGLINE,  
PULLSHOVEL or TRUCK CRANE

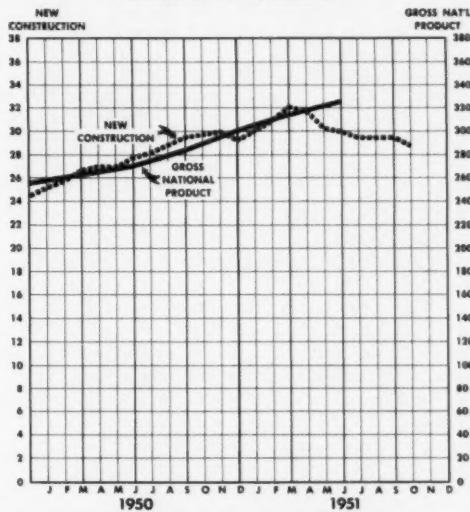
a star on every job!

**● TOTAL Construction compared  
with Gross National Product**  
(BILLIONS OF DOLLARS)



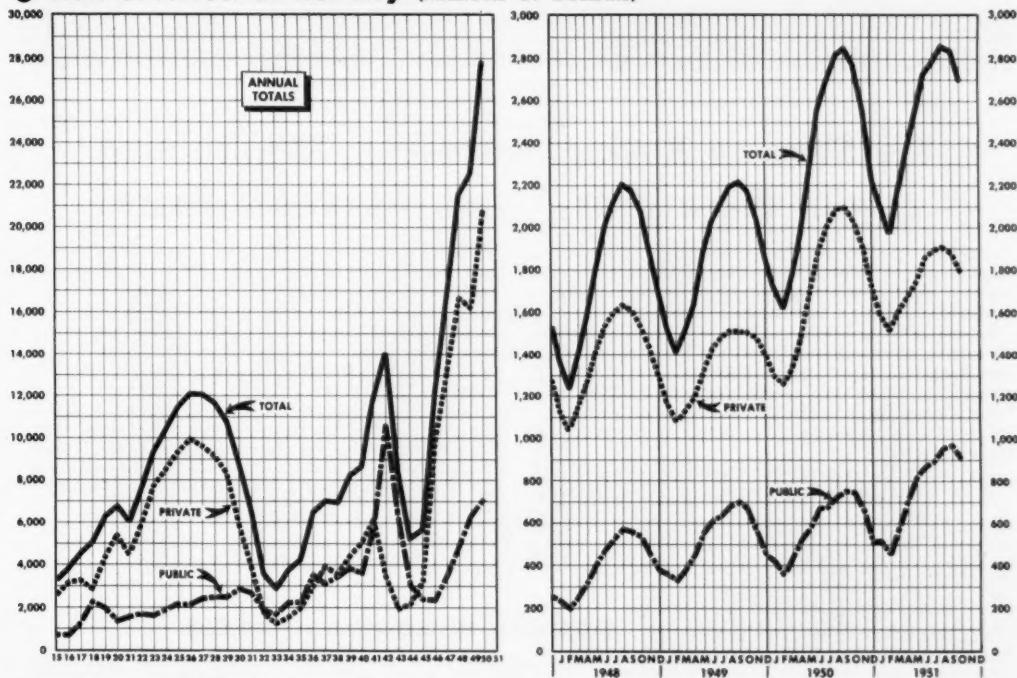
DATA SUPPLIED BY DEPT. OF COMMERCE

**● NEW Construction compared  
with Gross National Product\***  
(BILLIONS OF DOLLARS)

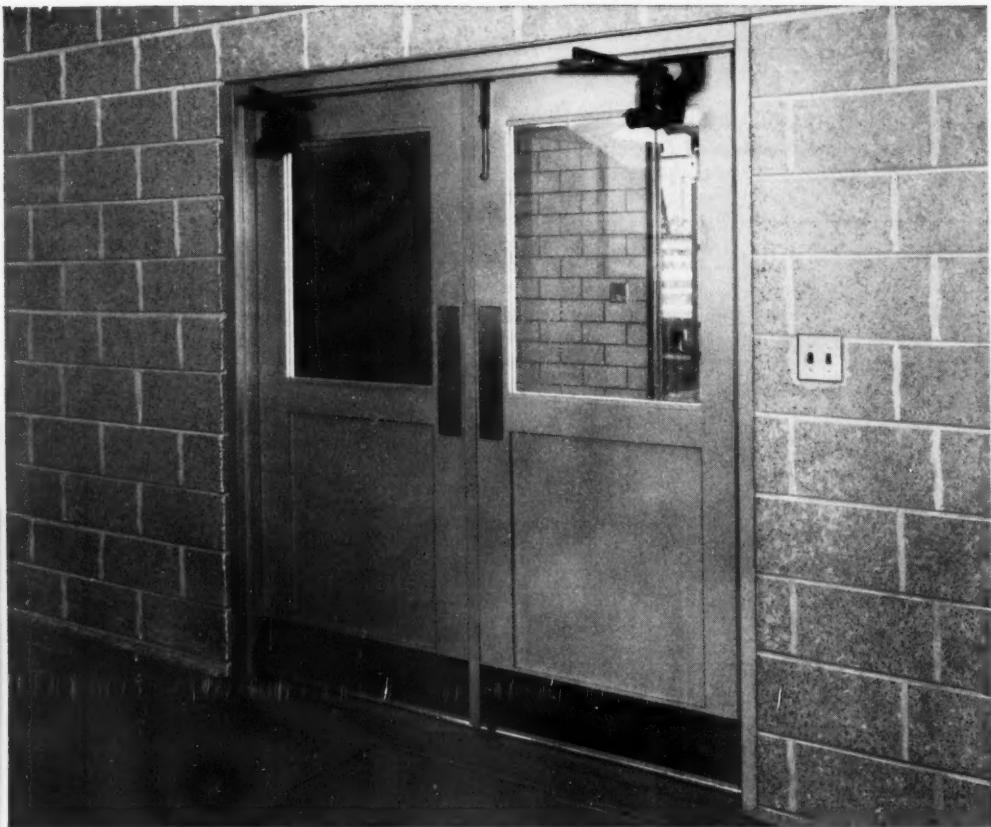


\* Seasonally adjusted at an annual rate

**● New Construction Activity** (MILLIONS OF DOLLARS)



DATA SUPPLIED BY DEPTS. OF COMMERCE AND LABOR



COMPLETE FENESTRA DOOR UNIT, one of 135, in Robert N. Mandeville High School, Flint, Mich. Architect: Bennett & Straight, Dearborn, Mich. Contractor: Karl B. Foster, Flint.

## You Save on Buying, Installing, Maintaining ...with these Door·Frame·Hardware Units!

**Save on buying**—Fenestra's great manufacturing facilities, engineered for volume production and elimination of waste of materials and man-hours, can turn out more high-quality door units . . . in less time . . . at lower cost.

**Save on installing**—Fenestra\* Hollow Metal Doors come complete with strong steel frames and shining hardware. Installer just bolts the frame together, attaches it to floor and anchors it to wall, screws on template locks and hinges, hangs the door. No cutting or fitting or mortising or puttying or prime-painting. Saves on-the-site time, labor and money!

**Save on maintaining**—Fenestra Hollow Metal Doors won't sag, warp, swell, shrink or splinter. They can take

a beating and come up smiling. An occasional coat of paint makes them look like new. They're insulated, too, for quiet performance.

These Fenestra Standardized Hollow Metal Doors are in local stocks. Compare the performance, the quality, the complete cost with any door on the market. They're another Fenestra Building Product engineered to cut the waste out of building.

Doors with Underwriters' B Label are also available. Just call the Fenestra Representative (he's listed under "Fenestra Building Company" in your Yellow Phone Book). Or write Detroit Steel Products Company, Dept. C-11, 2255 East Grand Boulevard, Detroit 11, Michigan.

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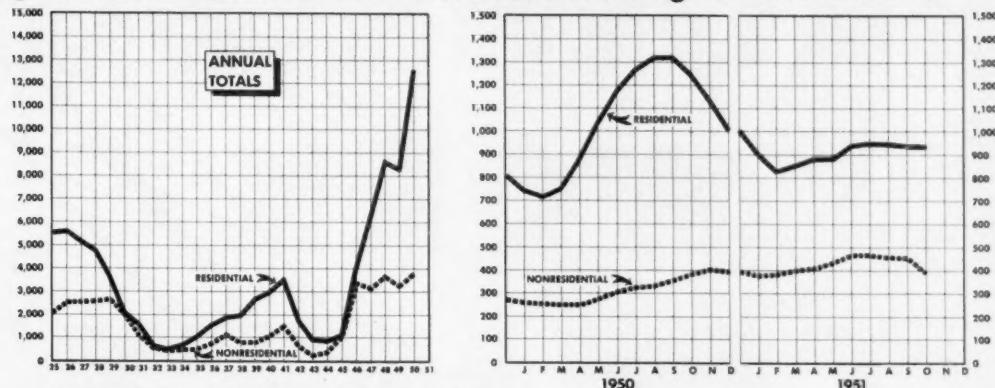
# Fenestra

**DOORS · WINDOWS · PANELS**

*engineered to cut the waste out of building*

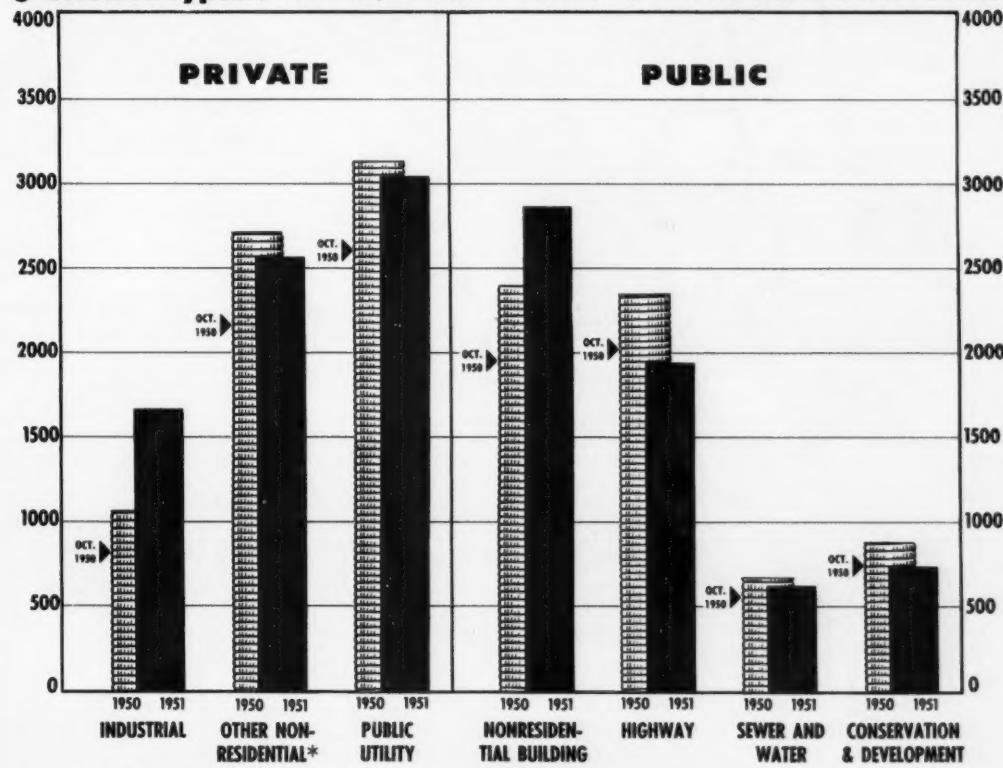
## NEW CONSTRUCTION ACTIVITY

## ● Private Residential and Nonresidential Building \* (MILLIONS OF DOLLARS)



\* Residential excludes farm; Nonresidential includes industrial, commercial, institutional, and social and recreational building, but excludes public utility building.

## ● Selected Types: (CUMULATIVE, MILLIONS OF DOLLARS) 1950 and 1951 VOLUME THROUGH OCTOBER



\* Includes commercial, institutional, and social and recreational building

*Get all the facts on*

# "KOEHRING WORK CAPACITY"



**Up to 79½ TONS  
LIFT CAPACITY**

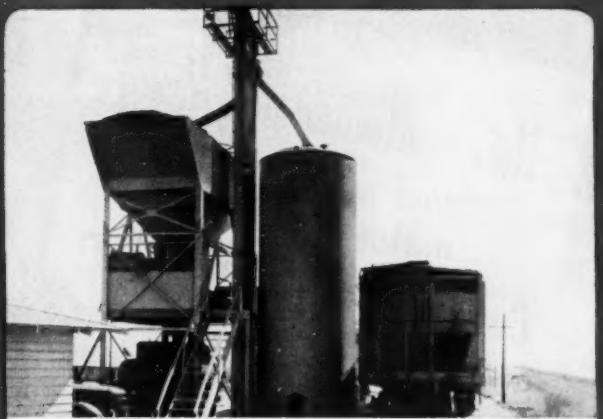
up to 2½ yards  
dipper capacity

**I**f you are interested in getting the highest profit-earning value in excavators and cranes . . . it will pay you to measure by "KOEHRING WORK CAPACITY".

Your Koehring distributor has specific figures and facts that will let you prove for yourself the biggest profit advantage. See him soon.



THE CONSTRUCTION  
MATERIALS  
COMPANY  
SUBDIVISIONS  
KOEHRING • PARSONS • JOHNSON



### FLEXIBLE Johnson Roadbuilders Bin

can be used as a portable batch plant for handling 2, 3 or 4 aggregates. This same All-Welded bin also converts to Transit-Mix Plant (illustrated), or Central-Mix for handling bulk cement and 2 or 3 aggregates. It can be equipped with 1 or 2 multiple-material Hi-Speed Batchers, size 34 Roadbuilders Batcher . . . or 2, 3 or 4-yd. truck-mixer charging batcher. Bin is available in 2, 3 or 4 compartments, 50 to 125 cu. yd. capacities. Get more facts from your Johnson distributor, or write for illustrated catalog.

C. S. JOHNSON Co., Champaign, Ill. (Koehring Subsidiary)



### 9 $\frac{3}{4}$ -FT.-PER-MIN. Parsons 250 Trenchliner®

digs 16 to 42 in. wide, up to 12½ ft. deep . . . has full reverse of all operations for undercutting or making vertical set-ins. Offset digging boom cuts within 11 in. of side obstructions . . . power-shift spoil conveyor dumps right or left. Easy-in-easy-out "Tap-In" teeth for buckets and side cutters are quickly installed, self-sharpening. Your Parsons distributor can show you many other production-boosting features. See him, or send for catalog. Also, 3 other sizes are available including a wheel-type Trenchliner.

PARSONS Company, Newton, Iowa (Koehring Subsidiary)

*How a Monument of Mercy  
saved men, money,  
material with  
Concrete Joist Construction*



BOLEMON & RULFO, ARCHITECTS

St. Frances Cabrini Hospital — Alexandria, La.  
—an outstanding example of functional beauty  
that can be achieved with Concrete  
Joist Construction.

ALL OVER AMERICA, those responsible for building our hospitals are facing a challenging problem. Hospitals *must* be built *quickly*... yet materials and manpower are scarce. The need today is to make the *fullest* use of our total resources... of men... of material... yes, the most effective use of money, too! St. Frances Cabrini Hospital met the need by using *Ceco Meyer Steelform Concrete Joist*

*Construction*, which provides big savings these three ways:

1. **SAVES MEN** because less time and labor are required to provide open wood centering and form work.

2. **SAVES MONEY** by saving concrete... the "dead load" is kept to a minimum. Removable steelforms can be re-used, so only a small rental is charged.

3. **SAVES MATERIAL** because only a mini-

mum of critical steel is used. Less concrete is necessary than in other concrete floor constructions.

The result... a strong, flexible building capable of absorbing great strain. It's fire-resistant... **SAFE**; soundproof... **QUIET**. *Ceco*, originator of the *Steelform* method, is first in the field. So when concrete joist construction meets your need call on *Ceco*... the leader over all.

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**CECO  
STEEL**

*In construction products CECO ENGINEERING makes the big difference*

**For Moderate Income Families in Large Cities**

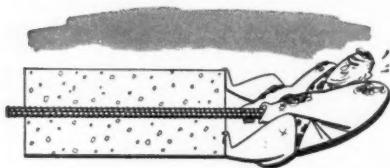
(Formerly referred to as the "Cost of Living Index," compiled by the Bureau of Labor Statistics)

This table indicates the average changes in retail prices of selected goods, rents and services bought by the average family of moderate income from July 15, 1949 to September 15, 1951.

They are presented here for use by employers who may wish to take these cost of living data into consideration when contemplating adjustments of wages based on increased living costs.

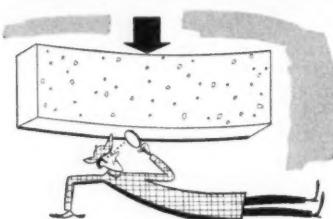
The Bureau of Labor Statistics surveys 10 key cities every month and 24 other large cities quarterly. Prices are obtained on food, fuel, apparel, house furnishings and miscellaneous goods and services. Rental information is obtained quarterly only for all cities. The computations are based on the indexes for the years 1935-39, which are taken as the average of 100 points.

	1949			1950			1951		
	JULY 15	AUG. 15	SEPT. 15	JULY 15	AUG. 15	SEPT. 15	JULY 15	AUG. 15	SEPT. 15
Average.....	168.5	168.8	169.6	172.5	173.0	173.8	185.5	185.5	186.6
Birmingham, Ala.....	171.0	171.1	171.8	175.7	177.7	179.7	189.2	190.5	191.4
Mobile, Ala.....	.....	169.2	.....	.....	172.9	.....	.....	185.6	.....
Los Angeles, Calif.....	167.2	166.8	167.1	168.2	169.1	169.5	186.7	186.6	187.2
San Francisco, Calif.....	.....	173.0	.....	.....	176.0	.....	.....	188.4	.....
Denver, Colo.....	167.8	.....	.....	169.5	.....	.....	187.6	.....	.....
Washington, D. C.....	166.0	.....	.....	168.9	.....	.....	180.8	.....	.....
Jacksonville, Fla.....	.....	176.5	.....	.....	182.4	.....	.....	192.0	.....
Atlanta, Ga.....	172.3	.....	.....	176.6	.....	.....	193.1	.....	.....
Savannah, Ga.....	173.3	.....	.....	177.2	.....	.....	196.5	.....	.....
Chicago, Ill.....	173.9	174.4	175.8	179.2	180.2	179.8	190.9	190.9	191.8
Indianapolis, Ind.....	171.0	.....	.....	175.1	.....	.....	186.8	.....	.....
New Orleans, La.....	173.8	.....	.....	178.7	.....	.....	188.9	.....	.....
Portland, Me.....	.....	164.9	.....	.....	167.9	.....	.....	178.6	.....
Baltimore, Md.....	.....	174.0	.....	.....	178.1	.....	.....	190.5	.....
Boston, Mass.....	162.6	163.8	165.4	168.4	168.4	168.2	176.9	177.2	177.8
Detroit, Mich.....	170.4	169.9	170.4	176.2	175.1	175.4	188.6	188.5	189.0
Minneapolis, Minn.....	.....	168.3	.....	.....	173.2	.....	.....	183.1	.....
Kansas City, Mo.....	162.1	.....	.....	166.1	.....	.....	179.7	.....	.....
St. Louis, Mo.....	.....	168.9	.....	.....	175.0	.....	.....	186.2	.....
Manchester, N. H.....	170.0	.....	.....	173.1	.....	.....	184.4	.....	.....
Buffalo, N. Y.....	169.4	.....	.....	172.0	.....	.....	185.5	.....	.....
New York, N. Y.....	167.1	166.8	167.5	170.0	168.0	170.3	181.2	180.9	182.5
Cincinnati, Ohio.....	168.7	168.8	170.8	173.4	174.4	175.5	185.6	185.3	186.8
Cleveland, Ohio.....	.....	171.6	.....	.....	176.0	.....	.....	189.1	.....
Portland, Ore.....	175.3	.....	.....	179.2	.....	.....	195.7	.....	.....
Philadelphia, Pa.....	167.5	168.7	169.6	171.5	172.3	173.6	185.4	185.4	186.1
Pittsburgh, Pa.....	171.9	172.4	172.3	174.9	176.4	177.7	189.3	188.8	190.0
Scranton, Pa.....	.....	169.5	.....	.....	171.8	.....	.....	182.5	.....
Memphis, Tenn.....	.....	172.7	.....	.....	177.2	.....	.....	189.9	.....
Houston, Tex.....	170.4	170.4	171.4	175.1	177.9	179.8	192.6	193.0	194.1
Norfolk, Va.....	.....	170.2	.....	.....	177.2	.....	.....	188.6	.....
Richmond, Va.....	164.4	.....	.....	168.1	.....	.....	181.3	.....	.....
Seattle, Wash.....	.....	170.8	.....	.....	175.2	.....	.....	190.9	.....
Milwaukee, Wis.....	.....	166.9	.....	.....	175.7	.....	.....	192.3	.....



### 1 Increased bond stresses and greater resistance to slip

See reports on National Bureau of Standards research by Arthur Clark . . . ACI Proceedings, Vol. 43, p. 381; Vol. 44, p. 437; Vol. 46, p. 161; by C. C. Fishburn . . . ACI Proceedings, Vol. 44, p. 289.



### 3 Reduced width of tensile cracks

See reports on National Bureau of Standards research by David Waisstein and Norman Seese, Jr. . . . ACI Proceedings, Vol. 41, p. 293.



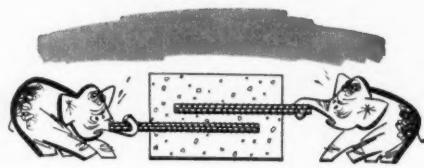
# HI-BOND®

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At the annual convention of the American Concrete Institute in 1949, Committee 208 on Bond Stress proposed changes in design stresses for concrete reinforcing bars. These proposals were made after Bureau of Standards tests proved that certain "improved" reinforcing bars could live up to higher standards.

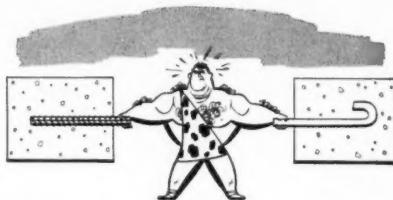
At the 1950 convention, the ACI Building Codes Committee adopted the proposals of Committee 208. And in February 1951, the Institute officially accepted the new building code change.

It is interesting to note that Inland HI-BOND has, for eight years, offered all advantages of higher bonding properties now officially recognized by ACI.



### 2 Increased efficiency at splices

See reports on National Bureau of Standards research by Ralph W. Kulge and E. C. Tuma . . . ACI Proceedings, Vol. 42, p. 13.



### 4 Hook anchorages unnecessary in most applications

See reports on National Bureau of Standards research by C. C. Fishburn . . . ACI Proceedings, Vol. 44, p. 289; by F. E. Richart . . . ACI Proceedings, Vol. 45, pp. 97 and 237.

See new ACI Building Code

The reinforcing bar with the built-in anchorage



## Sidelights for Contractors

By John C. Hayes, Legal Adviser

### Taxes

**Payment of Wages.**—A district court has ruled that a government contractor who agreed with his subcontractor to advance money to meet wage claims against the latter, did not thereby become the employer and was not liable for the withholding tax and Social Security taxes on such wages. In addition, it held that the government could not collect such taxes from a bond given by the contractor to guarantee payment to laborers and materialmen under the contract.

**Payment of Dividends.**—Under an amendment to the income tax regulations, all corporations paying dividends during the year 1951 and thereafter must file their information returns by February 28, rather than by February 15, following the calendar year in which the dividends are paid.

**Capital Gain.**—Where an owner of construction equipment leased it to another for a logging project, under an agreement that the lessee could purchase the equipment at the completion of the project, a district court held that the proceeds of the sale upon the purchaser's exercise of its option to purchase resulted in capital gain rather than ordinary income. The court also concluded that the taxpayer should be permitted to deduct as ordinary and necessary expenses depreciation on the equipment and expenditures for its repair and for construction of a logging road.

**Cash Receipts.**—A taxpayer whose books are kept on the cash basis of accounting must include all items of gross income in the year in which received, the tax court states, if received under a claim of right, even though, as in the case of prepaid subscriptions to a newspaper, some part might later have to be refunded.

**Compromise of Note.**—The Tax Court refused to allow the deduction of a loss suffered by a taxpayer on compromise of an interest-bearing note to save time and the expense of litigation. The transaction was held to be not one "entered into for profit"

within the meaning of Internal Revenue Code Sec. 23 (e), and the evidence did not establish the taxpayer's contention that he was in the loan business.

**Taxable Income.**—Under the rule that income is taxable to those who actually earn it, the tax court held that the original partners continued to be taxable upon the earnings of a partnership although their relatives had been substituted in their place. Capital was not a significant income-producing factor, the original partners continued to perform services, and it was not clear that they had relinquished effective control.

**Realization of Gain.**—Where a cash-basis taxpayer sold property for a cash payment not in excess of her basis for the property, and received no promissory notes but merely a contractual obligation of the buyer to pay the balance in deferred payments, the tax court decided that no taxable gain had been realized in the year of sale, since the nonnegotiable obligation was not the equivalent of cash and was not part of the amount realized in that year.

### Public Contracts

**Release.**—A release is to be construed as limited in its operation to such claims and demands as were contemplated by the parties at the time of its execution, the Comptroller General states, and does not preclude payment to a contractor for concrete slabs which were furnished by the contractor but omitted from the final pay estimate by mutual misunderstanding, oversight, or mistake.

**Disputes Clause.**—The Supreme Court this term will hear an appeal involving construction of the disputes clause (Section 15) under the 1938 standard form government construction contract according finality to departmental decisions involving a "question of fact," as applicable to a contractor's claim for extra work performed under a change order.

**Deviation in Bid.**—Under a decision by the Comptroller General, a low bidder's extension of the delivery time specified in the bid invitation and his conditioning of performance on the availability of certain equipment, goes to the substance of the bid rather than being an immaterial variation; and such a bid should be rejected, even though the bidder withdrew the qualifications after the bids were opened.

**Contract Settlement Act.**—The Office of Contract Settlement Appeal Board has denied relief under Section 17 (a) of the Contract Settlement Act to a prefabricated housing manufacturer as assignee of a Reconstruction Finance Corporation market guarantee issued to a supplier, since the assignment constituted a "formal contract." Section 17 (a), it is said, was intended to give relief to persons who proceeded without a formal contract and does not apply to persons dissatisfied with the terms of the formal contract they received.

**Extension of Time.**—The Comptroller General ruled that a construction contract provision for equitable adjustment of the time limit for completion in the event of specification changes by the government affecting the time required for completion, contemplates changes affecting the entire contract work; and such an extension of time for the performance of a portion of the contracted project applies to the entire contract.

**Government's Delay.**—Where a paving contractor entered into a government contract in the latter part of 1943, knowing that the government contracting agency did not intend to proceed until clearance for the project was received from the War Production Board, and notice to proceed was not given until the fall of 1944, the court of claims held that the delay was not so unreasonable under the circumstances as to entitle the contractor to recover losses sustained by reason of having equipment on the job in the spring of 1944.

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GRIP ON NAILS THAN A  
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## The Mobilization Program

AFTER SIXTEEN months of the mobilization program some phases are being shaken down, but predictions of the future continue risky.

The nation is emerging from the tooling-up stage and is entering into the period of volume production when the full impact of heavy military expenditures will be felt, Defense Mobilization Director Wilson has warned.

He has stated that the first six months of next year will be the period of most acute materials shortages, after which he hopes that increased supplies of materials can be available for civilian uses.

Materials are now being allotted to the construction industry during this quarter and the first three months of next year to support construction at an annual rate of \$29 billion in 1951 prices, other defense officials have stated.

The materials are being channeled into projects which government officials consider most urgent for military, defense supporting production, and essential civilian activities. Less essential construction projects are getting little of the controlled materials. Officials explain that this must be done if the mobilization program is to proceed on schedule.

By the first of November the construction industry had been completely under the Controlled Materials Plan for one month. Too little time had elapsed to tell how the plan would work for the industry over a sustained period of time.

When steel allocations were announced, there were almost immediate protests in Congress that insufficient quantities had been allotted to highways and schools. Defense officials explained that according to their figures there was not enough steel for all purposes, and that they had provided for continuation of all most urgent projects and the start of some additional ones. They pointed out that shutting off all automobile production, for example, would not provide another pound of structural steel for these purposes.

While government executives were pointing out that stated requirements for steel were much greater than potential production for the quarters, the steel industry was stating that the requirements give a false impression because they were far greater than record amounts which had ever been delivered to the construction industry in any quarter and were probably inflated requests.

The steel industry stated their belief that the CMP should be abolished, for steel, and recommended that if the plan were continued a competent committee should review requests for structural steel to determine how much steel actually could be used during the quarter for which delivery was requested.

Also, Chairman Grace of the Bethlehem Steel Corp., largest producer of structural steel, reported that orders have been falling off since April, that backlog are being worked off, and hinted that the company may have to curtail structural steel production because of the lack of orders.

While government officials have been hesitant to predict the availability of steel for construction in the

future, they have warned that heavy military demands for copper will continue and that copper and brass products for construction can become very scarce, with little prospect of improvement in the foreseeable future.

Manufacturers of aluminum products during the first quarter of next year will be cut so that they will have only about 20% as much of the metal in the first quarter of next year as they had a year earlier. As new aluminum facilities get into production, however, government officials hope that it will be possible to substitute aluminum for many items previously made of copper or brass.

There may be reasons for cautious optimism about construction possibilities next year, but a step-up in the cold war, a steel strike, a blizzard-type winter, a failure in the scrap drive, or many others could upset all guesses.

## Modular Coordination Examined

A SAMPLING of what general contractors say about the modular coordination method of construction appears this month on page 36.

This method for standardization of the sizes of building materials and of design, with measurements in multiples of four inches, has been offered as a means of conserving materials, manpower, and of cutting the cost of construction.

Its sponsors have not claimed that it would be a great success immediately. They realized that it would take time before all materials would be available in modular sizes, for architects to become proficient in use of the design, and for contractors' crews to become skilled in using unfamiliar designs and new sizes of materials.

Discussions by general contractors at recent meetings of The Associated General Contractors of America, and by architects and contractors at meetings of the Joint Cooperative Committee of the American Institute of Architects and A.G.C., have revealed that there are many practical difficulties to be encountered at the present time in use of the method.

Generally, contractors report that there are many headaches and considerable added expense when both standard and modular design and both sizes of materials are used on the same job. They indicate both material and labor can be wasted when the two systems are combined.

In order to get the facts, the A.G.C. Building Contractors' Division sent a questionnaire to building members and chapters. The first responses indicated that this is a controversial subject among contractors. The article in this issue quotes some of the early replies.

The aim of the A.G.C. and THE CONSTRUCTOR is to secure all possible information on actual operation of the modular coordination method. Comments are being invited from architects, materials producers, contractors and all others whose experiences can contribute useful information.

From a free and open discussion of the merits and present practical difficulties of the method may come recommendations for the best course of action.

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SINCE 1859 — BUILDERS OF CONSTRUCTION EQUIPMENT

» ENOUGH MATERIALS are being allotted to the construction industry during the fourth quarter of 1951 and first quarter of 1952 to support construction at an annual rate of \$29 billion, National Production Authority officials stated last month.

The materials are being directed to military, industrial and essential civilian projects which, in the opinion of government executives, are most essential to the defense effort or civilian welfare. Materials will be scarce for projects considered less essential.

#### Acute Shortages Forecast

The first two quarters of 1952 will be a "period of acute shortages," both Director of Defense Mobilization Charles E. Wilson and Defense Production Administrator Manly Fleischmann told four Congressional committees in mid-October when they announced controlled materials allotments for the first quarter, and gave a report on mobilization progress. Mr. Wilson stated:

"During the first quarter of 1952 and in succeeding quarters, we will be feeling the material pinch which is inevitable if our military production schedules are to be met and if our expansion programs are to proceed.

"During the period from June 1950 to October 1951, we quadrupled the quarterly rate of military deliveries. To reach our peaks we must double that rate. We must go from \$5 billion quarterly deliveries to a rate of over \$10 billion per quarter. I would estimate we are now using materials for military goods at a rate of nearly \$8 billion per quarter.

#### Near Peak Demand Now

"In my view, we are now much closer to peak demand for materials than most realize. By the middle of 1952 we should have more steel and more aluminum. Real progress is being made on expansion programs in these industries and this will soon begin to make itself felt. By the third quarter it is my hope that we will have much more to distribute and that the meeting of direct military and expansion requirements will not require such restrictive allotments to other areas.

"If during the first and second quarters we can sustain our military production and wisely distribute the remaining materials, we should begin to obtain relief from our expansion projects and from the fact that certain priority items are completed. It now

## NPA Says Materials Available For \$29 Billion in Construction

- Military and Industrial Demand Reaching Peak
- Relief Seen Late in '52 as Steel Output Rises

appears that the first and second quarters will be the period of most acute shortages."

In announcing first quarter allotments of controlled materials, Mr. Fleischmann noted that "because the defense program is beginning to hit its stride, the military uses of basic materials is growing rapidly and civilian production in the first three months of 1952 in general will be moderately lower than the last quarter of this year."

In discussing the construction situa-

tion with business editors last month, NPA officials reported that stated controlled materials requirements for construction were 60% greater the first quarter next year than in the same period of 1951. They believe that the amounts of materials allocated to construction for the fourth quarter this year and the first quarter next year will be adequate for essential projects. But they made it clear that types of projects considered less essential, such as commercial, will be hit hard.

## Wilson Reviews Construction Prospects

- Foresees Expansion in Some Fields—Cut-backs in Others

» THE NATION is emerging from the tooling-up stage on many military items and is at the threshold of the period of volume production when the full impact of heavy military expenditures will be felt more fully, Charles E. Wilson, Director of Defense Mobilization, stated in his third quarterly report issued October 1. Significant quotations from his report follow.

"Programs for the expansion of our basic industries have been launched, but increased output is only beginning to be realized. We have reduced the output of important types of civilian goods substantially, but output of these goods by any normal standard is still high, and demand for virtually all civilian goods is being met. Shortages of manpower are still limited to a few areas and occupations. But the full impact on the economy of heavy military expenditures is still ahead.

**Plant construction.** The basic industrial expansion that supports our greater military output is also under way. Private plant construction in manufacturing industries is at a rate double that of a year ago.

"This means that the period of greatest stringency has now begun for metal-using industries. The total requests by industry for various types of steel, copper, and aluminum in the coming quarter exceeds the supply by from 50 to 100%.

"In setting goals and scheduling expansion, first things are being put first. Thus, the capacity to produce aluminum and the other basic materials that are the present bottlenecks is being scheduled ahead of capacity in industries which consume them.

**Structural steel.** Extension of CMP to all new construction will be particularly useful since it should make it possible to direct the flow of structural steel shapes, which are especially critical, to the more important projects. Thus, the means will be provided for an orderly cutting back of non-defense construction.

"Requests for structural steel for the fourth quarter, already conforming to NPA restrictions, were nearly double the expected supply.

"In general, projects not yet started were authorized structural steel only when the facility was critically important. Among facilities already started, preference was given in the following order: (1) those over 49% complete, (2) those over 19% complete and requiring less than 100 additional tons of steel, (3) those from 1 to 49% complete, in the order of the highest percentage of completion.

"Almost the full allotment of structural steel requested for the aluminum expansion program was granted. The ferro-alloy expansion program received 82% of its requests. The steel

expansion program was cut to 51% of the requested amount of structurals, with most of it specified for basic capacity and blast furnaces rather than finishing plants.

"Much sharper cuts were in order for other types of construction. An average of about 26% of requests was given for new facilities to produce industrial equipment, textiles, chemicals, electric and electronic equipment, pulp and paper, and other commodities needed by the military and by the civilian economy.

"Types of construction deemed less essential and more postponable at this time were cut back even more sharply. For example, commercial, social, and recreational construction received 12,000 tons of structural steel, only 11% of stated requirements.

"In other construction—public roads, schools, hospitals, food distribution plants—criteria of priority have been established to insure that limited quantities of structural steel move to the most immediate needs. Subject to conservation practices, materials for these purposes may be purchased without application to the government. Approximately 35,000 tons of structural steel have been set aside for these purposes in the fourth quarter.

**Housing.** The present estimate of housing starts for the year 1951 is about 1 million units, as against a record 1.4 million in 1950. The present rate is 40% below 1950. If this reduced rate continued through the next year it would result in around 850,000 starts in 1952.

**Other construction.** The cuts in commercial and non-defense industrial construction this year will be even greater than those in housing. The cuts will more than counterbalance the huge increase in defense building this year. The total construction investment will be about \$29 billion, a drop of 5% in physical terms from the record 1950 volume. Next year construction probably will drop to about \$26.5 billion, but this will still be higher in physical terms even than the boom war year of 1942.

"Next year, educational building will be down a little, but can be brought back up if school authorities switch from structural steel to other materials. Highway, sewer, and water conservation will decline somewhat along with further decreases in private housing. Private commercial building will be cut severely. However, declines in these areas will be of short duration."

## Steel Industry Report Hits CMP Defects

### • Charges that Agencies Submit "Unrealistic" Demands

» A COMPREHENSIVE report and recommendations on how defense mobilization agencies might assist the industry in maintaining and increasing steel production was submitted to Defense Mobilization Director Wilson on October 11 by representatives of the iron and steel industry.

Mr. Wilson and Defense Production Administrator Manly Fleischmann announced that the recommendations were being studied and many were being put into effect.

Industry representatives stressed the need for realism in stated requirements for steel. The report stated:

"The weakest link in the CMP system is found in the method used to determine the stated requirements. It is impossible to determine the degree of imbalance between supply and demand when stated requirements are unrealistic. The need for improvement in this phase of the operation is evident.

"Stated requirements for carbon steel in the fourth quarter of 1951 were 147% of supply. Making allowances for the restrictions on the production of passenger automobiles and consumer durables makes it clear that other steel consumers requested tonnages equal to 192% of their average quarterly tonnage in 1950—a totally unrealistic demand.

#### Structural Shapes Demands

"Typical of this problem of unrealism are the stated requirements for structural steel shapes—223% of the estimated supply. This is equivalent to 2,900,000 tons for the quarter or an annual rate of 11,600,000 tons. During the all-out war year of 1942, shipments of structural shapes totalled 4,948,000 tons, the record year to date.

"The record of consumption of structural shapes shows that the construction industry accounts for approximately 51% of the total. Fourth quarter stated requirements of structural shapes for the construction industry (bridges, buildings, etc.) totaled 1,400,000 tons. This compares to the all-time quarterly record supply during the second quarter of 1951 of 640,000 tons of structural shapes shipped to the construction industry.

"It is evident to us that inflation of requirements is due largely to eagerness on the part of claimants to par-

ticipate in mill rollings in the earliest quarter without proper regard to the status of each project with respect to completion of engineering design, and bills of materials in time for fourth quarter mill rollings. The rate at which steel construction projects can be designed, fabricated and erected, must be taken into consideration before expressing the demand for structural shapes to be rolled in a particular quarterly period.

#### Near-Capacity Fabrication

"The over-statement of demand for structural shapes for construction in the fourth quarter resulted in a DPA public announcement of various percentages of reduction in programs requiring structural shapes. These cuts from stated requirements were viewed with alarm in all quarters and yet it is significant that the reduced percentages of fictitiously high and unrealistic figures are providing sufficient allotments to operate steel fabricating shops at close to capacity during fourth quarter of 1951 and well into first quarter of 1952.

"As a specific example, using relative figures—one program had stated requirements of 185,000 tons of structural shapes and was allotted 78,000 tons. The allotted tonnage is approximately 30% higher than any recorded quarterly shipments of shapes for that purpose. Spot checks at the level of the steel fabricators failed to locate any appreciable tonnage for that program which had progressed to the point of requiring rollings in the fourth quarter which was not covered by allotments. There is no doubt that a great many of the jobs that made up the 185,000 tons requested were not ready and could not be made ready with respect to design, engineering, bills of materials, etc., in time to be placed on the mills for fourth quarter rolling.

#### Recommendations Offered

"We recommend that there be set up within DPA a competent staff charged with the responsibility of examining the status of the construction stated requirements of each claimant projects that are included in the agency. The purpose of this examination would be to determine whether these requirements are realistic as to quantity and timing. Construction

projects should first secure the approval of this staff before the stated requirements of structural shapes are presented to the DPA Requirements Committee. The immediate job is to examine the projects now pending."

### Some Changes in Controls

Builders have been substantially assisted by the recent reclassification of several types of projects in the commercial category.

Grain elevators, feed mills, terminal warehouses, printing, duplicating and publishing establishments, forestry and lumber operations buildings and facilities, and radio and television broadcasting facilities were moved from the commercial category under M-4A, the National Production Authority's construction order, to the industrial plant group.

The significance of this change is in the self-authorizing provisions of the controlled materials plan and M-4A. For commercial projects, builders can self-authorize only up to two tons of steel, 200 pounds of copper, but no aluminum.

Under the industrial classification, 25 tons of steel, 2,000 pounds of copper and 1,000 pounds of aluminum may be self-authorized per quarter.

NPA also announced last month that the term "production equipment" in construction regulations does not include office supplies or office machines.

The Defense Department and the Atomic Energy Commission now have authority to apply the new top priority symbol "DX" when delay in delivery threatens vital programs of the agencies. The symbol may not be used for controlled materials.

Modifications in CMP Reg. 6, requiring cancellation of outstanding orders, do not apply to orders which have been rescheduled because of delays in construction. It is important to note that, if orders have not been placed and accepted for delivery, unused portions of the allotment should be returned and a revised CMP-4C submitted for approval of the revised construction schedule, NPA advised.

Direction 3 of Reg. 6 requires that all other outstanding orders calling for delivery on the fourth quarter must be cancelled before Oct. 31, if these orders plus orders for deliveries made during the third quarter (but not shipped by Oct. 8) exceed the allotment for the fourth calendar quarter.

## DPA Tightens Reins on Structural Steel

### • Asks Claimant Agencies to Use Reinforced Concrete

» THE ALLOCATIONS of total steel listed by DPA (see table on following page) do not reveal the amounts of structural steel within these totals that may be used in various programs.

This fact has led to many false impressions on the part of those who attempt to compare allocations to one construction program with those to another.

Construction is the major user of structural steel, having been allotted about 890,000 tons during the fourth quarter of this year and a tentative figure of 900,000 tons during the first quarter of 1952. This is about 63 per cent of the total supply of 1,425,000 tons as estimated by DPA.

Demand has been so great for structural steel—coupled with indications that practically no expansion of structural steel facilities is incorporated into the expansion program of the steel industry—that DPA is placing definite limits on the amounts that may be used on many more production programs than was the case in the fourth quarter.

Stated requirements for structural steel in the first quarter were 185.8% of supply, forcing the agency to make allocations only to what it considers most essential programs, and to urge claimant agencies to defer as much work as possible and to stimulate use of reinforced concrete or other materials where possible.

### Highways, Schools, Hospitals

NPA and DPA officials stated that allocations for the two quarters are sufficient for essential projects. They stated that while the allocation of structural steel for highways had been cut in the first quarter, it should be possible for all essential projects to be continued if reinforced concrete is substituted for structural steel in small structures.

For schools, DPA officials believe that the steel allocation is sufficient for the 1,400 elementary schools underway, and for about half the requirements for the 600 libraries, museums and higher educational buildings underway, and for the start of 300 most urgently needed elementary schools. They estimate that if materials are used for classrooms, the program will equal the 1950 rate of construction.

For hospitals, enough structural

steel was allocated for projects underway, but none will be available for new starts until the program has been studied further.

### Industrial and Commercial

For industrial construction, DPA officials stated that generally the more urgent projects were allotted all the materials they could use.

For commercial construction, fourth quarter allocations of 13,000 tons of structural steel were estimated to be sufficient for needs of projects 20% completed or more. The 10,000 ton allocation for the first quarter is estimated to be sufficient for needs of those who received steel in the fourth quarter and those projects 20% or more completed. Other projects underway are not likely to get sufficient allocations for their needs. No steel will be available for starts, except in critical areas.

Major allotments of structural steel for the fourth quarter, compared with tentative allotments for the first quarter of 1952, as they stood in late October, are shown below.

Program	4th Qtr. (Tons)	1st Qtr. (Tons)
Army Dept.	14,000	9,000
Atomic Energy	35,000	36,300
Defense Dept.	175,230	196,012
Defense Elec. Power Adm.	120,000	143,000
Defense Min. Adm.	7,000	13,000
Defense Transport Adm.	30,000	22,000
Fed. Sec. Agency (Schools & Hosp.)	68,000	38,304
Housing & Home Fin.		
Agency	17,000	10,500
Maritime Adm.	15,000	17,000
OIT-ECA Exports	25,000	24,000
Pet. Adm. for Defense	60,000	55,000
Bur. Pub. Roads	100,000	50,000

### NPA Divisions

Agr. Mach. & Imp.	(*)	12,000
Canadian	50,000	48,000
Constr. Mach.	(*)	30,000
Eng. & Turbine	40,000	35,000
Facilities Bur.	1236,200	350,000
Gen. Ind. Equip.	53,500	67,488
Iron & Steel	(*)	36,000
Metal Wkg. Mach.	24,800	32,500
Mining Mach.	(*)	19,000
Motor Vehicle	(*)	15,000
Ord. & Shipbldg.	16,500	13,000
Railroad Equip.	150,000	184,240
Water Resources	(*)	9,000

\* These programs used substantial amounts of 4th quarter steel on a percentage of total steel allotment basis for which figures are not available.

† Reported higher, latest figure not available.

## GENERAL

### 1st Quarter 1952 CMP Allotments Compared with 4th Quarter 1951

Claimant Agency and Program	TOTAL STEEL (TONS)		COPPER & ALLOYS (000 lbs.)		ALUMINUM (000 lbs.)	
	1st Qtr. '52	4th Qtr. '51	1st Qtr. '52	4th Qtr. '51	1st Qtr. '52	4th Qtr. '51
Dept. of Agriculture .....	43,350 <sup>1</sup>	125,700	2,440	3,670	100	400
Dept. of Army .....	35,200	43,434	1,525	1,750	100	300
Atomic Energy Comm. ....	141,050	183,339	8,515	7,160	6,000	7,559
Civil Aeronautics Adm. ....	17,077	6,190	735	741	100	20
Dept. of Defense .....	2,408,700	2,014,981	297,000	205,704	250,000	171,693
Defense Elec. Power Adm. ....	309,550	303,026	79,050	80,852	39,000	35,000
Defense Fisheries Adm. ....	1,682	—	31	—	5	—
Defense Minerals Adm. ....	36,927	41,727	1,605	985	200	140
Defense Solid Fuels Adm.:						
Coal Mines .....	9,096	7,552	213	259	15	11
Coke Ovens .....	17,258	27,135	400	455	70	70
Defense Transport Adm. ....	63,253	83,000	1,759	1,770	200	300
Federal Civil Defense Adm. ....	2,238	—	65	—	—	—
Federal Security Agency:						
Education .....	96,296	183,412	3,897	6,721	10	515
Hospitals .....	64,123	—	2,583	—	400	—
General Services Adm. ....	24,014	19,920	640	600	100	225
Housing & Home Fin. Agency .....	83,700 <sup>2</sup>	186,500	5,978	18,306	250	500
Dept. of Interior .....	12,280	10,000	175	256	64	37
Maritime Adm. ....	100,975	104,000	4,840	4,515	100	600
OIT-ECA Exports .....	652,500	721,514	10,435	9,825	2,000	2,450
Petroleum Adm. for Defense .....	1,708,500	1,784,165	8,300	7,975	850	785
Bureau of Public Roads .....	201,520 <sup>3</sup>	267,025	900	1,150	250	520
Veterans Adm. ....	12,395	11,041	1,337	800	80	30
<i>National Production Authority Divisions</i>						
Agriculture Mach. & Implements .....	527,100	561,563	7,800	9,400	6,500	7,505
Aircraft .....	12,400	13,577	1,708	940	6,000	4,252
Aluminum & Magnesium .....	12,850	12,850	—	—	100	3,800
Building Materials .....	1,113,100	855,328	51,850	54,635	45,300	50,412
Canadian .....	415,050	406,150	4,600	2,750	2,150	2,250
Chemicals .....	314	1,087	1,384	1,561	5,090	8,090
Communications Equipment .....	39,550	38,287	47,230	50,735	2,500	2,647
Construction Machinery .....	487,654	497,689	7,220	6,316	2,400	2,169
Consumer Durable Goods .....	870,260 <sup>4</sup>	879,027	38,220	49,634	49,000	56,041
Containers & Packaging .....	1,682,250	1,611,091	258	570	19,000	22,232
Copper .....	43,250	42,520	3,300	3,259	2,260	10,994
Electrical Equipment .....	586,710	563,285	147,169	156,063	24,250	28,172
Electronics .....	75,385	79,804	33,760	32,465	18,000	16,700
Engine and Turbine .....	580,500	497,213	29,930	10,569	3,900	2,534
Facilities Bureau (Industrial & Commercial Construction, etc.) .....	712,700 <sup>5</sup>	713,074	28,886	28,918	7,000	6,019
General Components .....	1,089,500	1,130,125	172,074	152,824	18,000	14,778
General Industrial Equip. ....	500,436	815,583	41,905	60,803	17,000	25,021
Iron and Steel .....	243,216	422,222	17	3,154	—	30,485
Leather and Leather Prods. ....	11,740	11,096	1,668	656	1,200	700
Lumber and Wood Prods. ....	6,840	4,713	175	145	1,000	1,200
Metal Working Mach. Equip. ....	556,000	643,705	36,028	29,766	7,000	8,048
Mining Machinery & Equip. ....	114,661	129,745	3,283	2,506	250	230
Misc. Metals & Minerals .....	2,518	2,601	1,159	1,564	35	43
Motion Picture—Photo Products .....	7,999	7,775	1,206	1,377	3,200	3,734
Motor Vehicle .....	3,054,131	3,447,285	128,055	143,743	77,710	90,180
Ordnance & Shipbuilding .....	95,870	162,064	7,276	8,525	1,250	1,288
Printing & Publishing .....	10,639	3,690	1,105	1,196	500	355
Pulp, Paper and Paper Board .....	1,170	1,610	22	23	25	25
Railroad Equip. ....	1,640,750	1,839,469	86,360	76,295	6,000	8,193
Rubber .....	30,353	32,741	4,023	4,043	950	723
Scientific & Tech. Equip. ....	45,490	46,329	40,380	35,550	18,000	16,680
Service Equipment .....	46,397	50,933	2,863	3,115	3,700	4,791
Textile .....	—	—	—	No Requirements	—	—
Tin, Lead & Zinc .....	158,152	160,947	3,633	4,050	175	175
Water Resources .....	—	—	—	—	—	5,000
Reserves for MRO-Self-Certification, Field Cases & Small Users .....	2,334,426	2,483,165	105,159	86,734	43,833	34,950

NOTE: Allotments are shown as they stood at the end of October. Adjustments are made from time to time in the various programs.

<sup>1</sup> Plus 38,125 tons for self-certification and field cases.

<sup>2</sup> " 123,211 " " " "

<sup>3</sup> " 30,405 " " " "

<sup>4</sup> " 100,000 " " " "

<sup>5</sup> " 30,206 " " " "



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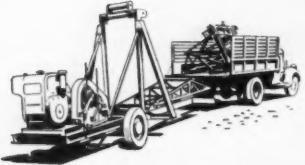
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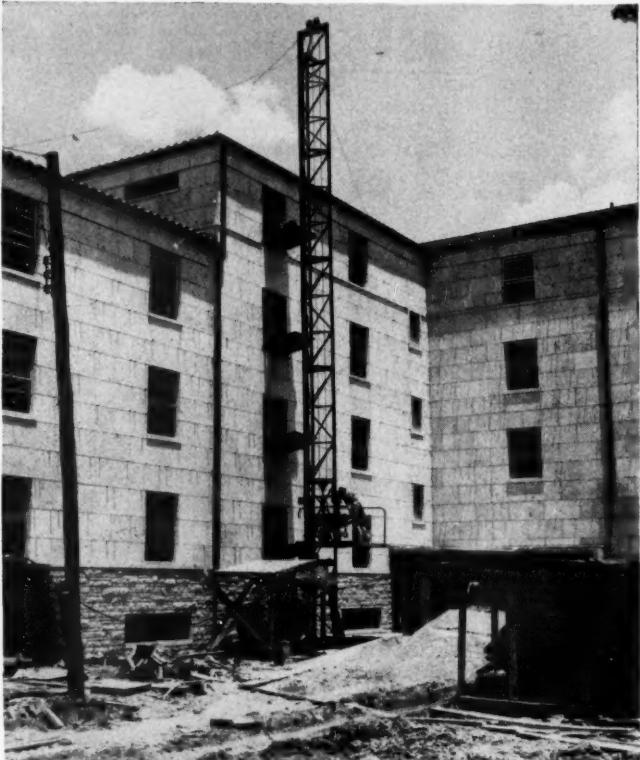
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» THE FIRST amendment to the Labor Management Relations Act, which went into effect as Public Law 189 on October 23 when the President signed S. 1959, will have no apparent immediate effect on general contractors, according to an analysis by Assistant Managing Director J. D. Marshall of The Associated General Contractors of America.

The amendment permits the use of union security agreements without elections being held for that purpose when the right of the union to represent employees has been established by representation elections and certifications, or unless otherwise clearly established to the satisfaction of

## T - H Change Means Little to Contractors

### • Union Shop Pacts Permissive, but Election Problem Unsolved

the National Labor Relations Board.

Prior to bargaining for union security agreements between employers and unions must come the first step of determination of the appropriate union to represent the various crafts in the various areas.

Representation elections and certifications have been found practically impossible in construction. S. 1973, which would have eliminated the necessity for representation elections in construction, failed to pass during the

session of Congress just adjourned.

The NLRB, by decision, has not ruled on how it can be clearly established to the satisfaction of NLRB that unions can be certified as appropriate bargaining units without elections under terms of the Taft-Hartley act.

The uncertainty facing general contractors on their methods of bargaining with unions under terms of the original Taft-Hartley act, creates uncertainty that contractors could make union security agreements.

Actually, Mr. Marshall pointed out, there is nothing in this amendment alone which has been enacted that protects the construction employer from discrimination charges if he operates under a union security agreement.

Until there is further legislative action, or until the NLRB clearly states how construction employers may recognize unions without elections, Mr. Marshall advised contractors to consult legal counsel before entering into any union security agreement.

## Building Trades Work Outlook "Good"

### • Labor Department Sees Plenty of Work for Skilled Craftsmen

» THAT the building industry will continue to prosper, after the temporary demands of the mobilization effort have been met, is the implied prediction of the U. S. Department of Labor in the recently released "Occupational Outlook Handbook."

The volume, which is used to advise young people and veterans on employment trends, asserts that, although the 1950's will see the building trades hampered by competition for materials, their long-range outlook is good.

#### High Replacement Need

The forecast is based, not only on the slowly expanding need for construction, but the fact that a high percentage of present journeymen in some of the trades are ready to retire.

"The number of new workers needed to replace those lost by death and retirement will be unusually high for several years," the authors say.

Changes in design and technology will change the nature of the work done by building craftsmen, it is said, but "There is no danger that the trades as a whole, and only negligible risk that any of them individually, will become obsolete."

Other factors—"standardization of dimensions and materials, more complete factory processing, new materials, increased mechanization, and similar results of advancing technology will neither abolish journeymen's work nor convert it into routine semiskilled operations."

The department warned that the construction industry follows the business cycle closely and federal efforts

to keep building mechanics employed in times of depression avail little.

"Public construction cannot be easily increased enough to offset a large drop in private building," the handbook states. Because the ratio of private building to public is sometimes 5 to 1, it would take a doubling of public building to offset a 20% reduction in private building.

"The expansion of public construction involves a number of very serious problems," it reads, "and cannot be regarded as a simple, dependable adjustment that will be provided automatically as needed."

Considering the individual building trades, the handbook describes the nature of the work, how to enter the field, probable earnings and employment outlook.

#### Different Trades Evaluated

It considers as "good," the future for carpenters, bricklayers, cement finishers, construction machinery operators, lathers, plasterers, glaziers, asbestos workers, electricians, sheet metal workers and elevator constructors. However, those trades will all be adversely affected by the defense effort during the '50's.

The difficulties of this decade are not expected to hurt, as much, the employment opportunities of structural and ornamental iron workers, rodders, plumbers and pipefitters, whose long-range outlook, also, is good.

Stonemasons, laborers, painters and paperhangers will have difficulty finding work, as their craft is declining or their field overcrowded.

## Wage Enforcement Bodies

The Wage Stabilization Board early in October announced the appointment of Regional Enforcement Commissions for 10 of its 14 regions, including Boston, New York, Richmond, Atlanta, Cleveland, Chicago, Detroit, Denver, Minneapolis and San Francisco. Appointments are yet to be made for regions with headquarters in Seattle, Dallas, Kansas City and Philadelphia.

The Regional Enforcement Commissions, as well as the National Enforcement Commission in Washington, are composed of three public members and alternates. There are no labor or industry representatives. They also handle enforcement for the Construction Industry Stabilization Commission, which administers the wage stabilization program in construction.

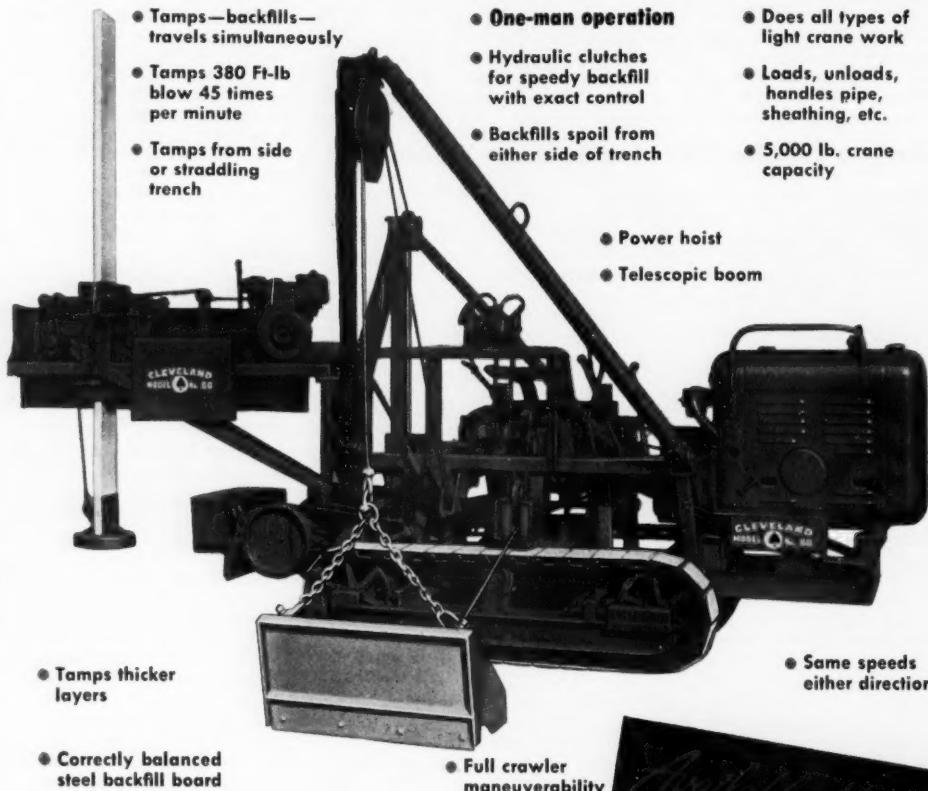
The enforcement commissions will hear cases of violations brought to them by the enforcement attorneys of the regional general counsel's staff. Investigations of reported violations are being made by inspectors of regional staffs of the Labor Department's Wage and Hour Division.

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## **Renegotiation Board Order**

The recently organized Renegotiation Board has granted an extension of time for contractors and subcontractors to file financial statements.

The first order to be issued by the board pertains to persons "having fiscal years ending prior to November 30, 1951" and gives them until March 1, 1952, to file statements required by the Renegotiation Act approved last March.

So far, four members of the five-man board have been confirmed by the Senate. They are: Chairman J. T. Kochler, Md.; L. E. Hartwig, Mich.; J. H. Joss, Ind.; and F. L. Roberts, Mich.

They have fairly wide discretion to determine contractors' excess profits. However, their rulings may be independently redetermined by the tax court.

Senator George (D., Ga.), chairman of the Senate Finance Committee, stated last month that the government expects to gain about \$1 billion in revenue from renegotiation to augment the 1951 tax law. Contracts, to be renegotiated, must have a direct connection with national defense, and the contractor's defense work must involve more than \$250,000 per year.

## **Transportation Tax Changed**

Revision sought by general contractors of the tax on the transportation of property has been included in the 1951 Revenue Act.

Text of the amendment reads: "The tax imposed by this section (3475) shall not apply to the transportation of earth, rock, or other material excavated within the boundaries of, and in the course of, a construction project and transported to any place within, or adjacent to, the boundaries of such project."

This revision corresponds to a request made earlier this year on behalf of The Associated General Contractors of America.

**Contracts negotiated** with the government without advertisement are now subject to review by the Comptroller General.

Public Law 245 gives him the right to examine all pertinent data of contractors and subcontractors, domestic and foreign, and provides a three-year limitation for review.

## **\$3.9 Billion Goes to Military Construction**

### **• \$200 Million for Atomic Energy; Other Programs Financed**

» **\$3.9 BILLION** in construction funds for the armed forces, \$200 million for the Atomic Energy Commission, and other construction funds were included in a supplemental bill sent to the President as the session closed.

The \$4.1 billion measure gives life to the \$5.9 billion military public works authorization which became Public Law 155 a few weeks ago.

### **Largest Share to Air Force**

For construction, installation and equipment of temporary or permanent public works, military installations and facilities, the Army can spend \$1 billion and the Navy, \$800 million. The Air Force gets much the larger share—\$2 billion for the same purposes. The money will be spent on

projects both at home and abroad.

Other construction funds included: \$10 million is for the Federal Security Agency's defense and community facilities functions, to be spent for loans and grants and direct federal aid to defense-crowded areas for construction of sewers, water mains and other facilities.

The Housing and Home Finance Agency gets \$25 million to aid defense housing construction in the same areas and \$11.3 million to aid in the construction of facilities. Also, the HHFA is given a \$6.8 million revolving fund for construction of homes in isolated defense areas where private builders fail to meet the needs.

An additional \$3 million is allotted to the Bureau of Reclamation for construction and rehabilitation.

## **Many Types of Projects Allotted Funds**

### **• 1st Supplemental; State, Commerce and Justice Measures**

» **FUNDS FOR** construction included in the appropriations for the Departments of State, Commerce and Justice, P. L. 188, and in the 1st supplemental bill, will finance heavy, highway and building projects.

The State Department gets \$12 million for plan preparation and construction of projects authorized by agreement between the United States and Mexico. Also, \$30 million is provided for emergency flood control along the Rio Grande.

For liquidation of obligations under the Philippine rehabilitation program, \$3 million is provided.

The Justice Department gets \$470,000 for constructing, remodeling and equipping buildings and facilities at penal institutions.

### **Funds for Roads and Airports**

The Commerce Department appropriation includes funds for roads and airports to be spent by the Bureau of Public Roads and the Civil Aeronautics Administration.

For the federal-aid highway program, \$325 million is appropriated, of which over \$9 million is for personal services. \$3 million is appropriated for elimination of grade crossings, \$21 million for the forest high-

way program, \$1.1 million for public lands highways, \$3.5 million for Tongass forest highways in Alaska, \$3 million for the Inter-American highway, and \$1.5 million for access roads.

Money for the federal-aid airport program totals \$28.7 million. Of this amount, \$15 million is for projects within the country, \$80,000 is for projects in the Virgin Islands, \$300,000 is for projects in Hawaii, and \$200,000 is for projects in Alaska. Also taken from the total fund is \$10 million for liquidation of incurred obligations, and \$2.7 million for planning, research and administrative expenses.

The National Bureau of Standards gets \$3.8 million for payment of obligations incurred in the construction of laboratories.

### **1st Supplemental Appropriation**

Construction funds in the 1st supplemental appropriation are:

Atomic Energy Commission, \$265 million for its over-all program; and Housing and Home Finance Agency, \$8.9 million for Alaska housing.

The Federal Civil Defense Administration is appropriated \$79.5 million for its programs, with no funds for shelter construction.

**Pass Civil Functions Funds**

» THE ARMY Corps of Engineers has been appropriated \$597.3 million for rivers, harbors and flood control projects during the 1952 fiscal year—\$478.4 of which is actually for construction.

After two months of heated debate in conference, the appropriation bill finally emerged, not too much the worse for wear, and was signed by the President.

**Emphasize Electric Power**

The total provision for rivers and harbors projects is \$125.2 million with emphasis on projects with electric power producing facilities. For McNary Lock and Dam, Ore., \$42.9 million is appropriated, and for Chief Joseph Dam, Wash., \$16.9 million.

The total flood control appropriation of \$353.2 million is slated as follows: General fund, \$306.2 million; Mississippi River and tributaries, \$46 million; Sacramento River, \$1 million.

In addition to these funds, the first supplemental appropriation, passed but not signed at press time, provides \$22.5 million (including \$6.5 million for administrative expenses) for Corps of Engineers projects in occupied territories other than Germany and Austria.

**Flood Relief Appropriations**

Three laws were passed by Congress to provide funds for flood relief in stricken middle western areas.

Largest of these is the \$113 million appropriation contained in P. L. 202, which divides the sum between the Department of Agriculture and the Reconstruction Finance Corporation.

Agriculture gets \$16.5 million for conservation of land resources, \$2 million for restoring channel capacity of waterways, and \$5 million to add to the disaster relief fund.

RFC's disaster loan limitation was increased from \$40 million to \$100 million.

**Housing Act Amended**

The National Housing Act is amended by P. L. 107, to expand the lending authority to 100% of the appraised value of homes damaged or destroyed by flood. The law also authorizes federal assistance to state and local governments for providing temporary housing and other emergency shelter.

P. L. 80, appropriates \$25 million for a separate disaster relief fund to be spent in fiscal year 1952.

**Aid, Access Roads Provided**

Provision of emergency relief funds for flood-damaged highways and bridges and for access roads necessary for defense, was made when two amendments to the Federal-Aid Highway Act were signed into law.

P. L. 45 increases the \$5 million authorization in section 9 to \$15 million to be available as an emergency relief fund for highways and bridges damaged by floods or other disasters.

P. L. 177 modifies section 12 of the act by increasing from \$10 million to \$45 million the amount authorized for the construction of access roads needed in the defense program. The amendment also provides that \$20 million instead of \$2 million shall be immediately available for contracts.

Included in the funds appropriated to the Bureau of Public Roads is \$1.5 million for access road construction. The same money measure, P. L. 188, provides \$325 million for the federal-aid program.

**Fuel-Driven Generators**

Construction of eight fuel-fired electric generating plants to "firm up" the federal power system in the Pacific Northwest would be authorized by H. R. 4963.

Claiming that there is an immediate need to guarantee continuous power to the several aluminum plants in that area engaged in defense production, proponents of the bill asked for immediate passage.

The bill would call for the construction of three 100,000-kilowatt steam plants and five 20,000-kilowatt gas turbines costing an estimated \$60 million. The generators would be under the direct control of the Department of Interior.

The bill was reported out of the House Public Works Committee but failed to reach the floor before the session ended. It will be taken up when Congress convenes in January.

**Actions of 82nd Congress (1st Session) Affecting Construction**

A \$91 BILLION legislative program ended when the 82nd Congress adjourned Oct. 20, after passing a host of "peacetime" money bills and other measures aimed at national defense preparedness.

Delays, record spending measures, and investigations into the executive branch of government and gambling highlighted this session which had to pass four deficiency bills to fill in for retarded appropriations, and which produced a *Congressional Record* totalling over 11 million words. A Senator pointed out that the Bible was written in a little over 77,000 words.

Major bills which passed are:

A \$56.9 billion appropriation to run the armed forces through this year and part of the next; a \$5.7 billion tax increase which hit personal and corporate incomes; a contract renegotiation measure which is expected to produce another \$1 billion in revenue during the year; a \$7 billion money bill for foreign arms and economic aid; a resolution ending the state of war with Germany; renewal of the Defense Production Act with resultant unresolved

controversy over price controls; an extension of the draft law with minimum age lowered to 18½, and a provision creating a commission to set up a universal military training program; a \$5.9 billion military public works authorization with a subsequent \$4 billion appropriation to fund projects to be built all over the world; appropriations for the Atomic Energy Commission totalling \$1.7 billion; a \$597 million appropriation for rivers, harbors and flood control projects; and measures to provide loans, grants, and mortgage insurance for construction of housing and community facilities in crowded defense areas.

Bills awaiting action, when the 2nd session convenes Jan. 8, include: provision for war damage insurance; change in the Capehart amendment on price controls; participation in the St. Lawrence Seaway project; and change in the price law to allow lowering of prices to meet competition.

Major construction legislation of the 1st session of the 82nd Congress and the special session of the 81st Congress is listed on the following pages.

## Special Session 81st Congress

**Military Construction Authorization**—Over \$1.65 billion for military and naval construction and equipment. Public works projects inside U. S. as follows: Army, \$299 million; Navy \$327 million; Air Force, \$518 million. Outside the U. S.: Army, \$92 million; Navy, \$54 million; Air Force, \$367 million. (P. L. 910, February CONSTRUCTOR, page 30.)

### Appropriations

**Defense**—Army: Corps of Engineers, \$319.7 million; for expediting production for the over-all Defense Department program, \$575 million. Navy: For public works, \$303 million. Air Force: For construction and acquisition of real property and installation of equipment, \$807 million. Atomic Energy Commission: For over-all expenditures including construction, \$1,065 billion.

**National Bureau of Standards**—For construction of laboratories, \$1.4 million.

**Maritime Commission**—For construction and acquisition of plants and facilities under government or private ownership, \$15 million in contract authority authorized.

**Public Health Service**—An additional \$10 million for grants for hospital construction.

**United States Soldiers Home**—For construction of barracks and hospital building, \$12.75 million.

**Bureau of Public Roads**—To continue survey and construction for Inter-American highway, \$4 million. Also, \$7 million for Federal Aid highway program.

**Southeastern Power Administration**—For power lines and appurtenant facilities, \$1.9 million.

**Bonneville Power Administration**—\$1.5 million for construction and other expenses.

**National Advisory Committee for Aeronautics**—\$1.8 million for construction and equipment.

**Coast Guard**—\$7.9 million for acquisition, construction and improvements.

**Bureau of Indian Affairs**—\$205,000.

**Fish and Wildlife Service**—\$110,000.

**Bureau of Mines**—\$600,000.

(All appropriations in P. L. 911, February CONSTRUCTOR, page 30.)

**Federal Civil Defense Act of 1950**—Creates Civil Defense Administration responsible for provision of adequate warning systems, and maintaining health, sanitation and communications in time of enemy attack. General contractors to play important role in rehabilitating affected communities. However, 82nd Congress turned down extensive shelter construction program when it appropriated only \$65 million of \$225 million requested. (P. L. 920, February CONSTRUCTOR, page 30.)

## 82nd Congress (1st Session)

### Defense Construction

**Military and Naval Public Works Authorization**—\$5.9 billion, largest single authorization for construction in history, divided as follows among the three services: Army, inside U. S., \$940 million, outside, \$175 million, secret, \$302 million (total, \$1.4 billion); Navy, inside U. S., \$629 million, outside, \$89 million, secret, \$113 million (total, \$882 million); Air Force, inside U. S., \$2.5 billion, outside, \$415 million, secret, \$1 billion (total, \$3.5 billion). Projects to be taken up jointly by the three services total \$133.8 million. (P. L. 155)

**Military and Naval Public Works Appropriation**—Army, \$1 billion for permanent and temporary public works and facilities; Navy, \$800 million for same purposes; Air Force, \$8 billion for acquisition and construction of real property. (P. L. 254)

**Atomic Energy Commission Appropriations**—total of \$1.7 billion for all expenses, including construction. Public laws are: No. 43, \$59.3 million; No. 137, \$1.1 billion; No. 254, \$200 million; No. 253, \$266 million.

**Defense Department Appropriations**—Army, under P. L. 170: Alaska communications system temporary and permanent public works in

connection with substations, \$1.4 million; Corps of Engineers, \$48.4 million for liquidation of obligations under authorized construction contracts; civilian components, \$24 million for training facilities and administration. Navy: \$37 million for liquidation under authorized public works contracts (P. L. 170), and \$17.6 million for new public works (P. L. 43). Air Force, for acquisition and construction of real property, \$187.3 million of which \$85 million is for liquidation of obligations (P. L. 170), and \$281.7 million (P. L. 43).

**Defense Housing and Community Facilities and Services Act, 1951**—provides for relaxation of credit restrictions in defense-crowded areas, aid to manufacturers of prefabricated housing; limits government housing projects to \$50 million in areas where private builders fail to meet needs, and limits federal aid for community facilities other than schools to \$60 million. Also, extends Wherry Act mortgage insurance for military housing through June 30, 1953, and permits Federal National Mortgage Association to make pre-construction commitments to buy \$200 million in mortgages. (P. L. 139)

**Housing and Community Facilities Appropriations**—P. L. 254: Housing and Home Finance Agency, \$35 million for defense housing, \$11.3 million for community facilities, and \$6.3 million for revolving fund. P. L. 134: Federal Security Agency, for grants, surveys and construction of schools in federally affected areas, \$75 million, of which \$25 million is for liquidation of obligations. P. L. 45: \$50 million for same. P. L. 254: \$10 million for community facilities and services, including loans and grants.

### Building Construction

**Hospital Appropriations**—P. L. 134: Public Health Service for federal aid grants, \$182.5 million of which \$100 million is for liquidation of obligations; \$10.4 million for continuing construction of combined hospital and research building of which \$10 million is for liquidation; \$700,000 for payments of obligations under 1930 contract authority for auxiliary service area structures. P. L. 137: To Veterans' Administration, \$27.5 million for hospital and domiciliary facilities, and improvements.

**Public Health Service**—for buildings and facilities, Cincinnati, \$2.4 million (P. L. 134).

**Federal Security Agency**—for pharmacy building, \$904,500, and for liquidation of obligations, \$352,000. Howard University (P. L. 134).

**Fish and Wildlife Service**—P. L. 136: for construction and acquisition of buildings and facilities, \$733,742. P. L. 253: \$530,000.

**Housing and Home Finance Agency**—for the Alaska housing program, \$3.9 million (P. L. 253).

**Department of Justice**—\$1.4 million for replacement of power and heating facilities, U. S. Penitentiary, Atlanta. (P. L. 45)

**American Battle Monuments Commission**—\$3 million for memorials and cemeteries (P. L. 137).

**National Advisory Committee for Aeronautics**—\$18.4 million for construction and equipment at laboratories and research stations, \$11.7 million of which is for payments of previous obligations (P. L. 137).

**Public Housing Administration**—\$10 million for low-rent housing projects. Number of housing units to be started during 1952 fiscal year limited to \$50,000 (P. L. 137).

**General Services Administration**—for renovation and improvement of federally owned buildings and adjacent grounds outside the District of Columbia, \$13.5 million; and for acquiring and improving land adjacent to U. S. Post Office, Chicago, \$8.8 million (P. L. 137).

**Federal Prison System**—\$470,000 for construction and improvement of buildings and facilities, of which \$360,000 is for liquidation of obligations (P. L. 188).

**National Bureau of Standards**—\$3.8 million for payment of obligations for construction of laboratories (P. L. 188).

**Controlled Materials for Schools and Hospitals**—recognizing the need for additional school and hospital construction, Congress expressed its desire that more steel, copper and aluminum be allocated to these programs by the National Production Authority and the Defense Production Administration (H. Res. 474, S. Res. 225).

(Continued on page 33)

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**Legislative Roundup—(Continued from page 31)****Highway-Airport Construction**

**Civil Aeronautics Administration**—\$28.7 million for federal-aid airport program, of which \$10 million is for liquidation of obligations, and \$2.7 million is for planning and administrative expenses (P. L. 188).

**Bureau of Public Roads**—P. L. 188: \$925 million for federal-aid highway program, of which \$9.3 million is for personal services; \$5 million for elimination of grade crossings; \$21 million for forest highways, of which \$2.2 million is for personal services; \$1.2 million for public lands highways; \$3.5 million for construction, reconstruction and surveys, Tongass forest highways, Alaska; \$1.5 million for access roads; \$3 million for Inter-American highway; and \$2 million for liquidation of war and emergency reconstruction obligations, Hawaii. P. L. 45: \$3.5 million for construction, surveys and repairs, Tongass forest highways; \$750,000 for liquidation of public lands highway projects. P. L. 136: \$700,000 for access roads transferred from Bureau of Land Management.

**Department of Agriculture**—P. L. 45: for Forest Service, development of roads and trails, \$3.3 million. P. L. 135: \$13 million.

**Alaska Roads**—\$20 million for roads, tramways, buildings, ferries, bridges, and trails, including surveys and plans for new road construction. Of this amount, \$2.5 million is for personal services and \$8 million is for liquidation of obligations (P. L. 136).

**National Park Service**—\$1.5 million for construction and improvement of roads, trails, parkways, buildings, utilities and other facilities, of which \$4.2 million is for liquidation (P. L. 136).

**Federal Highway Act, 1950, Amended**—P. L. 175: increases authorization of \$5 million in Section 9, to \$15 million available as emergency relief fund for highways and bridges damaged by flood or other acts of God. P. L. 177: increases amount authorized in Section 12 for access roads necessary to defense, from \$10 million to \$45 million; and increases from \$2 million to \$20 million the amount immediately available for contracts. Provides further that not more than \$5 million of any funds appropriated may be spent for road repair in military maneuver areas.

**Heavy-Railroad Construction**

**Army Civil Functions Appropriation**—P. L. 203: of total \$597.3 million, \$478.7 million is for actual construction in rivers, harbors and flood control projects. Rivers and harbors, \$125 million; flood control, \$353.2 million.

**Alaska Railroad**—P. L. 45: for construction, improvements and repairs, \$4 million. P. L. 136: \$2 million.

**Bureau of Reclamation**—P. L. 136: \$202.8 million for authorized projects and related activities. P. L. 254: \$3 million. P. L. 253: \$2.3 million.

**Bonneville Power Administration**—P. L. 43: \$9.7 million. P. L. 136: \$67.5 million for construction and acquisition of power lines.

**Alaska Public Works**—\$7 million to remain available until 1955 (P. L. 136).

**Public Health Service**—grants for water pollution control, \$900,000 (P. L. 134).

**Agriculture Department**—\$6.4 million for flood control, \$6 million of which may be spent outside of the Army Department's jurisdiction (P. L. 135).

**Southwestern Power Administration**—\$3.4 million for construction and acquisition of power lines and facilities, of which \$600,000 is for liquidation of obligations (P. L. 136).

**Virgin Islands Public Works**—\$992,970 for an additional amount to carry out provisions of the Act of December 20, 1944, of which not more than \$63,270 is to be available for personal expenses (P. L. 136).

**Miscellaneous**

**Bureau of Indian Affairs**—P. L. 45: \$8.7 million for construction; P. L. 136: for construction and repair of irrigation and power systems, buildings, utilities, roads and trails and other facilities, \$10 million of which \$3 million is for liquidation of obligations (of which \$4.2 is rescinded by P. L. 253); P. L. 253: \$573,000.

**Housing and Home Finance Agency**—\$550,000 for advance planning of nonfederal public works; \$13.1 already available is rescinded (P. L. 137).

**Flood Relief**—P. L. 107: amends National Housing Act to provide temporary housing for families in flood disaster area and to provide reconstruction loans; P. L. 80: \$25 million for general disaster relief in same areas; P. L. 202: \$113 million for rehabilitation; P. L. 137 authorizes expenditure of \$800,000 from President's disaster fund.

**Renegotiation of Contracts**—contracts which have "a direct and immediate connection with national defense" to be renegotiated. Exempt are contractors whose work in one year does not exceed \$250,000. Five-man board is created to apply criteria established (P. L. 99).

**Taft-Hartley Act Amended**—revision eliminates requirement for special election conducted by National Labor Relations Board before a union shop provision may be included in a collective bargaining contract, provided that the union is recognized by the board (P. L. 189). Union recognition problem remains for construction, however. (See page 27.)

**Federal Civil Defense Administration**—\$79.5 million for expenses, but no provision for shelter construction or planning (P. L. 233).

**Bureau of Mines**—\$1.5 million for construction and improvement of facilities (P. L. 136).

**Revenue Act of 1951**—Section 3575 amended to abolish the tax on transportation of "earth, rock, or other material excavated within the boundaries of, and in the course of, a construction project and transported to any other place within, or adjacent to, the boundaries of such project." Income taxes are increased 11.5%, normal corporate taxes 10%, and capital gains tax 1%. The 85% excess profits tax credit is reduced to 83% (P. L. 183).

**Force Account**—Bureau of Reclamation's work by force account or on a hired-labor basis limited to 12% of funds appropriated for construction, "except that not to exceed \$225,000 may on approval of the Commissioner be expended for construction work by force account on any one project or Missouri Basin unit when the work is unsuitable for contract, or when excessive bids are received;" and except in cases of local emergencies. Bonneville Power Administration's force account expenditures also limited to 12%, and Office of Territories' force account expenditures in Alaska limited to 20% (P. L. 136).

**Rural Electrification Administration**—authorized to borrow \$100 million for electrification program; \$6 million for telephone program; and also to borrow \$75 million and \$25 million more for programs respectively, if needed (P. L. 135).

**International Boundary and Water Commission**—\$10.1 million for authorized projects in agreements between U. S. and Mexico (P. L. 188).

**Philippine Rehabilitation**—\$3 million for liquidation of obligations (P. L. 188).

**Examination of Government Contracts**—Comptroller General has the right to examine any directly pertinent data of contractors and subcontractors where their contracts have been negotiated without advertisement (P. L. 245).

**Pending Bills**

**Construction of Air Force Installations**—H. R. 5425 would authorize \$43.5 million for construction at three bases.

**Change in Taft-Hartley Act**—S. 1973 would amend the law to permit an employee to make an agreement with building and construction industry employees, through a union, covering wages, hours, working conditions and the use of the union security clause in the agreement without prior election.

**Construction of Fuel-Fired Generating Plants**—H. R. 4963 would authorize construction of eight steam plants in the Pacific Northwest, costing about \$60 million.

**St. Lawrence Seaway**—H. J. Res. 337 would authorize U. S. participation in the project.

**War Damage Insurance**—S. 1848 would set up a War Damage Administration to administer a \$22 billion all-inclusive insurance fund. Seven other bills would authorize re-creation of former War Damage Corporation.

**Change in Price Law**—S. 719 would allow a seller to lower prices to meet local competition, if done in good faith.

## Better Training Sought for Cement Masons

### • National Joint Committee Meets in Washington

» WAYS TO IMPROVE and expand training of apprentice cement masons were sought by general contractors, labor union representatives, and U. S. apprenticeship officials who met in Washington last month.

Inadequacies principally noted by the members of the National Joint Cement Masons Apprenticeship Committee, which met for the first time on October 5, 1951, were the lack of local training programs, incomplete data for establishing instruction criteria, and insufficient financial support.

The committee is composed of representatives from the Operative Plasterers and Cement Masons International Association of the United States and Canada and The Associated General Contractors of America.

Also present as guests of the committee were Bureau of Apprenticeship Officials W. F. Patterson, director; and O. L. Harvey, statistician. M. M. Hanson, director of field operations for the bureau, was chairman of the committee.

The 16 national joint apprenticeship committees in the building trades are the backbone of the training programs whose success depends on the cooperation of management and labor.

Mr. Harvey reported that for every 100 trowel trades apprentices, five are cement mason apprentices, and for every 1,000 building trades apprentices, seven are cement mason apprentices.

It was reported that over 2,000 cement mason apprentices were registered in training as of September,

1950, and an undetermined number were in non-registered programs.

The committee recommended that every local joint committee consider employing a full-time apprentice coordinator or supervisor in order to obtain maximum benefits from the training program.

Also recommended was the establishment of more local committees through the fullest cooperation of management and labor. In this connection, Fred Fisher, chairman of the A.G.C. Apprenticeship Committee, stated that he would contact all of the association's chapters and branches.

The committee agreed to explore the matter of school instruction related to training cement mason apprentices for the purpose of drafting a general outline which would aid local committees.

Members of the joint committee are: Representing the Operative Plasterers and Cement Masons International Association of the United States and Canada—John J. Hauck, 1st vice president, Philadelphia; John J. Brennan, vice president, New York City; Anthony F. Giordano, vice president, Pittsburgh; representing the A.G.C.—Fred Fisher, Fisher Construction Co., Houston; Jack Cooley, John Cooley Co., Detroit; and Welton A. Snow, manager of the Building Contractors' Division, A.G.C., Washington, secretary of the committee.

Left to right, below, seated are Messrs. Snow, Hauck and Cooley. Standing are Messrs. Giordano, Patterson, Brennan, Fisher and Hanson.

### 2,791,000 Are Not Enough

The training of construction workers was the subject of two addresses made recently by W. F. Patterson, director of the U. S. Bureau of Apprenticeship.

"With the enormous volume of construction projects and the scarcity of experienced workers in the labor market, the necessity for training cannot be overemphasized," Mr. Patterson told those who attended the 34th annual convention of the Contracting Plasterers International Association in Miami, Fla.

He urged employers to employ draft-eligible as well as draft-exempt men.

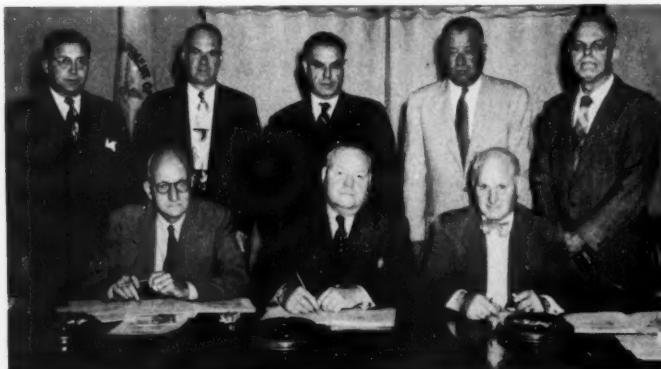
Though there were 2,791,000 workers employed in the construction industry as of August, 1951, there will be need for thousands more, Mr. Patterson said, to meet the demand for current defense construction projects. "A let-down in training in the construction industry is unthinkable," he told guests of an apprenticeship completion ceremony sponsored by the Madison, Wis., Building and Construction Trades Council last month.

He urged contractors to expand the work force through apprenticeship and other forms of industrial training.

"With regard to the period ahead, it is going to take everything all of us have to provide for the manpower required in the present emergency. The job of training must be accomplished through teamwork among all organizations and individuals who are able to contribute in meeting the demand for workers."

"Because of the need for workers in the present emergency, the Bureau of Apprenticeship has expanded its service to include assistance not only with respect to apprenticeship, but in setting up industrial training systems for all classes of workers concerned with defense activities. This service is also provided to the construction industry where the unions and employers find a need to adapt the skills of journeymen to new processes and materials."

The basic means of expanding the skilled labor force for the construction industry is through the apprenticeship program, he stated. "It is only through the experience and all-round training assured by apprenticeship that those entering the trades can acquire the wide variety of skills required for true craftsmanship."





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## Modular Coordination System Poses Many Practical Problems

- A.G.C. Survey Discloses Contractors' Headaches
- However, Possibilities of Method Recognized

Modular coordination is a method for the standardization of sizes of building materials and fixtures and design aimed at conserving materials, manpower and reducing construction costs. Measurements are in multiples of four inches.

The method is being promoted by a number of associations in the construction industry and by various government agencies.

Discussions by building contractors at the Midyear Board Meeting of The Associated General Contractors of America revealed many practical difficulties at the present time. For detailed information, a questionnaire was sent to A.G.C. building members and chapters.

The accompanying article is based on the first replies to the survey. Space will be available in subsequent issues for comments by the American Institute of Architects, the Producers' Council and others on these problems raised by general contractors. The purpose of THE CONSTRUCTOR is not to be critical, but to present information on all phases of the subject and the difficulties experienced by contractors in its use at the present time.

» DOES the modular coordination method of construction increase or decrease construction costs?

General contractors replying to a nation-wide survey made by The Associated General Contractors of America give both answers.

Practically all contractors replying to a questionnaire reported difficulties experienced in use of the modular coordination method, or difficulties with sizes of materials even when the method was not used.

About one in ten of those replying from 21 states and the District of Columbia gave qualified endorsement of the method.

A few, in varying degrees of emphasis, were of the opinion that the method never would accomplish its

objectives of conserving materials, manpower, and reducing construction costs.

The majority outlined their difficulties and suggested, directly or indirectly, that it would be years before there was enough understanding of the method, and materials of all kinds available in modular sizes, for the method to operate successfully.

Two factors were made clear by the survey. One is that the subject is a controversial one among general contractors. The other is that mixing standard and modular size materials on the same job means trouble and extra expense.

The modular method was devised before World War II, but its greatest use has been after the war. Currently the organizations most active in its promotion are the American Institute of Architects, the Producers' Council, American Standards Association, and several other associations of materials producers.

### Principal Factors Listed

As it now stands, general contractors report that, whatever the theoretical virtues of the modular coordination method, many practical difficulties are being encountered which actually increase the cost of construction.

Regardless of whether or not the method might eventually prove successful, some contractors questioned the advisability of pushing the method at the present time when it is difficult to secure materials and it becomes necessary to use substitutes in order to complete projects.

Some of the principal considerations brought out by contractors were:

- A heavier responsibility is placed upon architects to design projects thoroughly and accurately so that all parts will fit as they are supposed to, and, until all materials are available in modular sizes, to design and specify correctly for the materials which are available.

- The method cannot operate with complete success until manufacturers

throughout the country make all products in modular sizes. Many contractors pointed out, for example, that costs were increased where bricks were available in modular sizes but back-up material, doors or windows were not.

- The method is geared to precision and close tolerances, yet there is great variation in the sizes of modular brick and other clay products.

- In some instances costs can be increased because modular brick and other clay products are smaller than standard sizes, yet cost the same and require more material and labor per foot of wall.

- Remodeling jobs create a problem where the original part of the building was constructed by traditional design and sizes of materials and the addition uses the modular coordination method.

- Particularly in cases where materials of both modular and standard sizes are used, bidding uncertainties are created for general contractors.

- Time will be required for architects, contractors and workmen to secure an understanding of the system.

The actual experiences described by general contractors, rather than generalities, give the best picture of conditions as they now exist. The balance of this article will consist primarily of quotations from letters received. Names of contractors are omitted, with the city being given.

### Favorable Answers Qualified

The few A.G.C. members who are favorable to the modular coordination method generally had some qualifications. Excerpts from letters follow.

**Baton Rouge, La.** "At this time I would like to go on record as being 100% in favor of modular design in building construction. I have recently completed a large school building in which modular design was incorporated. There were naturally several items of standard design which had to be worked in. We experienced very little difficulty in this respect. Of course it does require some thought."

"I believe that as times passes and more items of manufacture are produced on a modular basis that the difficulties will iron themselves out. I believe, however, that unless one system or the other is adopted there is going to be a great deal of confusion resulting. For example, I am constructing a building in which the architects figured all the dimensions for

standard brick. They then selected a brick which can be purchased in modular size only. This sort of thing certainly should be avoided."

**Charlotte, N. C.** "We have done only one job, a relatively small hospital, in which a thorough-going attempt has been made to use modular design throughout. Our costs were very good, especially on masonry which is so often otherwise these days. Our mason superintendent advised that he had a minimum of cutting, which saves a lot of money."

"We do think it important to use modular design throughout a building and we also think that the end result will be considerable economy. . . . It costs as much to lay the small modular brick in a straight wall as it does to lay the ordinary common brick, but the tables are turned quickly when laying modular brick in a wall with a lot of openings which have been properly laid out. We are very much interested in furthering the general use of modular design."

**Altavista, Va.** (Experience on two half-million dollar schools where modular design was used to fullest extent practicable.) "In general, all trades were skeptical of the modular system during the early stages . . . chiefly from the necessity of depending on the architect's dimensional accuracy, it being far more difficult to 'work out' small dimensional discrepancies. Many old-school bricklayers would prefer that the architect work out no coursing, let alone tie everything to a four-inch unit."

"It is self-evident that the architect assumes an added measure of responsibility when he presumes to guarantee the fit of everything that is measured with his four-inch rule; if he will not accept that responsibility and put out plans dimensionally perfect, we will be better off without the modular system; if he will, then at such time as the modular system is generally used by fabricators, it will constitute a step forward by the construction industry."

"On the two schools, all masonry units were modular,  $3\frac{1}{2} \times 7\frac{1}{2}$  brick,  $7\frac{3}{4} \times 15\frac{1}{8}$  cinder block, and  $5\frac{1}{3} \times 12$  (including joints) glazed tile. The masonry worked out with very few hitches; the architect had done a conscientious job with his dimensions. Much difficulty was experienced with steel sash, particularly at the mullions where a structural steel column occurred. In some cases, window sills of very little depth had to be used

to adjust vertical window dimension to the modular, while door frames in many cases had unsimilar jamb and head members. On the whole, the result was good, and the bricklayers and contractor, if not the installers of fabricated items, came away sold on the modular system."

**Harrisburg, Pa.** "We have several jobs of modular design and we believe that if modular coordination could be completed it would be an advantageous method. During the period of controlled materials, where it is necessary to consider substitutions in order to get work completed, we find that in some cases it is difficult to work in standard dimension materials in a modular design job. We would be favorable to modular design structures under normal conditions but we would be very opposed to this type of construction if it were only partially designed on a modular basis without coordination of the building materials."

**Des Moines, Iowa.** "We have had several jobs which have been designed on a modular basis and our net thinking is that it is an excellent plan."

**Omaha.** "We are of the opinion that the modular system is a very fine method and a noble attempt to cut the cost of building construction, and every effort should be made to standardize the practice. However, we feel that unless architects take the lead and prepare plans, and especially specifications, that require and consider only materials of modular dimensions, the effort is lost and costly. Until such time as materials manufacturers change their dimensions, the effort is also lost."

"If specifications were drawn to reject any non-modular items, we believe the situation would be corrected in that eventually suppliers would be forced to change dimensions."

#### Unfavorable Comments

Other contractors, from their experiences, are opposed to the modular coordination method. Samples of their comments follow.

**Houston, Texas.** "We are convinced that some association or individual has done a super job selling to architects modular size masonry units, as is borne out by the experience we had with them. Modular units fail to accomplish the results claimed and accordingly increases the cost of construction."

**Montgomery, Ala.** "We believe that modular design is the most overrated innovation that has been thought up in many a day. The only person

who can possibly benefit is the manufacturer of brick and hollow tile. To my knowledge no company reduced the price of the brick when they went from standard to modular design, and yet the use of modular brick will increase the cost approximately 10% due to the smaller size of the brick."

"Generally, brick vary in length so it is not possible to hold to modular dimensions longitudinally. It is very easy to get three courses in 8 inches vertically with standard size brick. As we see it, the architects who follow modular design will increase the cost of their buildings and accomplish nothing."

**Gladbrook, Iowa.** "The worst difficulty we find with modular construction is in the selection of masonry materials. A lot of brick plants are attempting to make a brick which is modular in length but not in the height, which creates some difficulty. We find that the biggest difficulty is, buildings are designed to such close tolerances that most masonry products are not made accurately enough in size to permit them to be built without cutting at window openings, etc."

#### Mixing of Methods

Much of the difficulty encountered by contractors appears to be in having to use a combination of modular and standard measurements. Comments are:

**Mason City, Iowa.** "We have built one completely modular designed project. On this we experienced no difficulty. Most of our difficulty has been experienced on projects where they have not been designed by the architects for either modular or standard size masonry units. Practically all our difficulty has been with the brick work."

"Some architects do not state on their specifications or on their plans whether modular or standard coursing is to be used. Consequently, we have had to refer to our coursing tables in order to determine just what the architects used or intended to use. In following upon this detail, we have found that materials have been specified, such as glazed tile, etc., which in our territory are practically all modular in size. Then we might have the problem of using a standard size face brick and backing it up with a modular size back-up or glazed tile finish. This design just does not work out and causes a lot of added expense to make the job look right. The modular back-up units when used with a standard

face brick will result in extremely large bed joints.

"One common mistake which we think the architects are making is that the face brick are selected by the owner without consideration being given as to whether the manufacturer of the face brick is quoting on standard or modular size. On several of our projects we have had to recourse the entire job to conform to the face brick selected by the owner. We believe that the entire matter can be easily solved if the architects will design their projects one way or the other and follow through."

"One further error which we have noticed on the part of architects is the lack of carrying through in all the details for modular design. There are still a lot of manufacturers of various items, such as steel sash, who do not have their products changed over. In correcting or adjusting to make these units fit into the building, we have found that the general contractor is expected to make practically all these adjustments without compensation.

"We have encountered several cases where the modular design is used and dimensions are all right horizontally and vertically, but the architect has forgotten to correct his dimension for thickness of the walls, and consequently, expensive adjustments have had to be made on window sills, lintels, etc., to obtain a good masonry wall."

#### Variety of Difficulties

**Columbus, Ohio.** "Modular design does not work well in remodeling operations and for additions to existing buildings when the architect and contractor are required by the owner to match existing work. A great effort will be required by architects and manufacturers to reach a point where everyone conforms to new standards. This, like many changes, will need to be worked out gradually for several years."

**Norfolk, Neb.** "It would seem that the thing that should interest us most would be to cut the cost of construction in place of increasing it. Modular brick costs just as much as standard brick. The additional mortar required is an increase. A bricklayer will lay as many standard size as modular size. The cartage or hauling would be the same. To use modular design would increase the masonry part of construction at least 10%."

**Des Moines.** "Our experience during the past several years has not been favorable. We have encountered difficulty at several locations where standard size material was both designed and specified; however, modular material was selected with the result that stone had to be refabricated and numerous other difficulties encountered. As far as we are concerned they can put it all back on the basis of standard construction."

**Beaumont, Texas.** "It is my observation, and I have often expressed myself, that modular masonry is a more expensive operation, especially in finished tile walls. The tile varies, it is much harder to keep them in alignment, I find the mason will use the level more frequently, and modular units are not as easily adjusted for plumb or level, and considerable more material is required. I am not sold, and those architects I have talked to are not favorable to modular units."

**Fort Worth, Texas.** "Buildings in our part of the country are only partially designed for modular construction. We find that the brick manufacturers do not have a uniform size in their modular brick, and this has caused us considerable expense on several jobs; also, the steel window manufacturers have not designed all their windows to work modular brick.

"We also find that some architects will not design their masonry openings for wood windows or wood doors to modular size in width; then from one window to another, or from a window to a door, they do not space those openings so that they work modular brick from one opening to the other, and this causes considerable cutting of brick. In our opinion, there is considerable improvement necessary by the A.I.A. in the modular design of buildings."

**Salt Lake City.** (Experience on school building). "The architect refused to make changes in brick and we had to ship brick from Texas to Denver to Salt Lake. On various other items he stuck to his terms, and we ended up building the school in accordance with plans and specifications of modular design. Without doubt, this building has taken twice as long to build as any other of like size where we have been able to use local materials."

"With modular brick and modular window sizes, we ended up cutting the modular brick under the windows to 1" thickness to make up for a deficiency, also we ended up chipping

concrete off the bottom of the bond beam to receive the modular size glass block, and in general we have had one headache after another. We wish to report, however, that the modular sizes in steel sash and doors and the like are very fine and they have given us considerable ease in certain phases of the building."

**Gastonia, N. C.** "The necessity of using modular materials with the conventional size materials has proved very costly and unsatisfactory. I would prefer to go back to the conventional sizes. This has been done by masonry manufacturers in this area."

**Birmingham.** "Where modular brick was specified and used, back-up tile in modular sizes was not available, making it difficult to hold tile beds down to level with the brick. We do not favor this type of construction because of the difficulty in obtaining modular size materials, and also because the workmen are not accustomed to working with modular materials, which tends to slow the jobs."

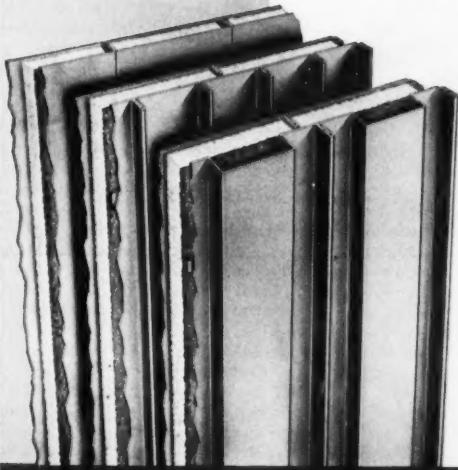
**New Orleans.** "A majority of architects in this area do not attempt to lay out their buildings on a modular basis. We have constructed one small building in which an attempt was made to develop a completely modular design. However, the result was far from satisfactory. Inasmuch as our superintendent and our subcontractors had never encountered the scheme of grid dimensions as well as actual dimensions, considerable confusion resulted."

"Further, in the New Orleans area the available common brick and more inexpensive face bricks are not of modular size, with the result that very little could be accomplished even though all plans were prepared on a modular basis. However, our firm does feel that it would be advantageous if all work was designed on a modular basis."

**Niagara Falls, N. Y.** "We have not had occasion to construct a modular designed building but have used modular system materials. Perhaps it is because of the lack of modular-size masonry units, but we have not been able to find any saving in the use of the new style steel windows. We find disadvantages both in the difficulty of obtaining the old style windows for replacement and the additional cost of the crazy glass sizes. Even with the 7 $\frac{1}{8}$ " high concrete blocks, our bricklayers lay up 8 $\frac{1}{8}$ " courses in hot weather."

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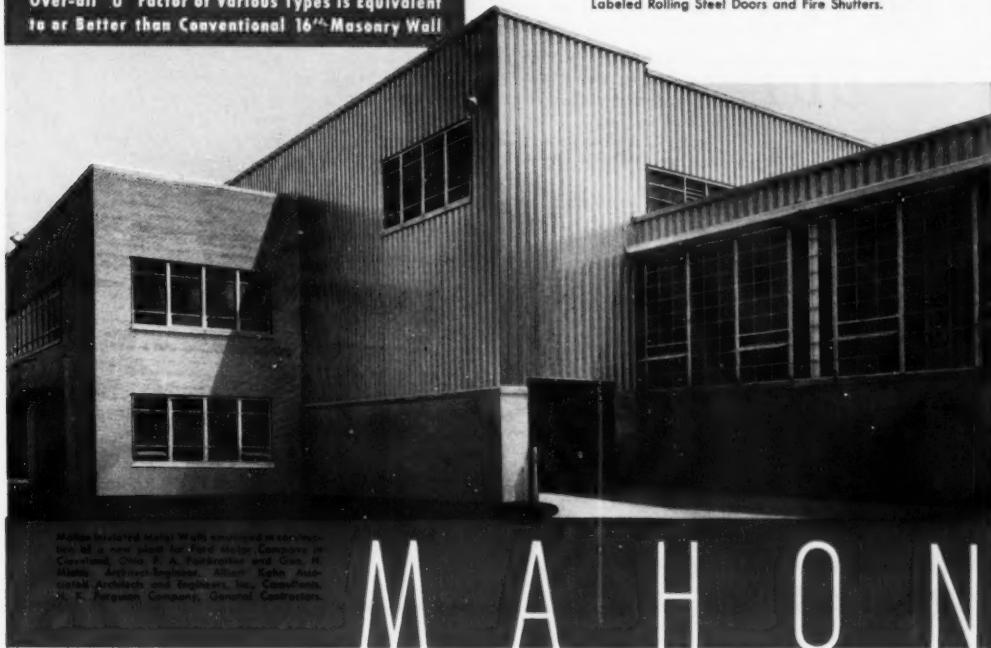
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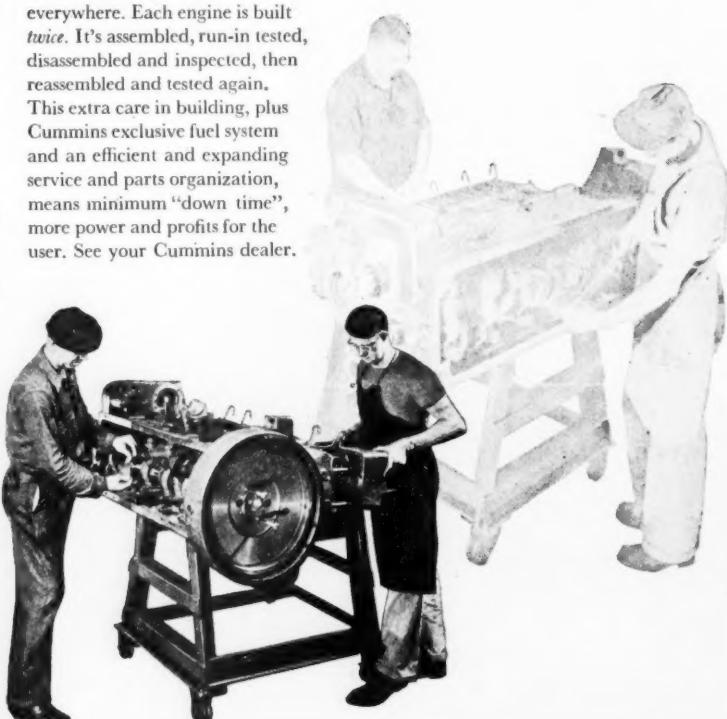
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**Changes in A.I.A. Documents**

Recent changes approved by the A.G.C. Governing and Advisory Boards at their midyear meeting, amend articles in two A.I.A. standard documents: Form A2, General Conditions of the Contract for the Construction of Buildings, and Form 105, Agreement Between Contractor and Owner (cost plus fee basis).

**Form A2:** Article 25 now requires that the architect who finds cause to withhold the contractor's payment certificate must state reasons in writing.

Article 27 clarifies the limits of contractor's liability insurance.

Articles 27 and 28 extend owner's responsibilities for liability insurance and fire insurance respectively, as amended. Subcontractors are to be included as joint insureds, and extended coverage insurance requested by the contractor but not provided for in the contract, shall be acquired by owner and charged to contractor.

Article 31 now provides that the owner shall be responsible for insuring against loss of use of his property, however caused. The contractor now affirmatively denies liability for injuries to the work beyond his control or without his negligence.

**Form 105:** Article 7 covering contractor's costs to be reimbursed by the owner is now Article 5.

Article 8 now gives the contractor the right to take all cash discounts unless the owner deposits funds with him to purchase materials.

Article 9 now covers both subcontractors and separate contractors and their relation with the owner, the contractor and the architect.

**A.I.A.-A.G.C. Committee Warns of Future****• Dearth of Plan Preparation Forebodes Unemployment**

» THE UNCERTAINTY of obtaining permits for non-defense construction projects, or if obtained, that projects will continue without costly delays, threatens the nation and the construction industry with severe unemployment problems once normal schedules may be resumed.

This warning came from architects and general contractors in Washington last month at the meeting of the American Institute of Architects-A.G.C. Joint Cooperative Committee.

They maintained that prospective owners are deferring plan preparation of commercial, residential and other types of construction which every community needs, with the result that a serious lag in construction starts must be faced once these projects are permitted to go ahead.

Unemployment during the period between commencement of architects' plans and commencement of construction will be inevitable unless some remedy is found, they cautioned.

Discussion of this issue concluded with the resolution that owners, architects and contractors join in requesting control agencies to consider some practical solution.

The A.G.C. announced that a survey of its building members was being conducted to determine their experiences with modular coordination, a subject long of mutual interest to both associations. Findings will be reported at the next meeting.

Both architects and contractors indicated that modular design is still in

its infancy, and has a long way to go before suppliers, architects, contractors and their workmen can use this method to attain its designated goal of less costly and better buildings.

Members who were experienced in the application of modular designs stated that early work must be limited to small projects where difficulties are not so complex, before any degree of success can be achieved in the construction of large residential and commercial buildings.

Other topics discussed included alternate bids, changes in A.I.A. documents and *Handbook of Architectural Practice*.

**Unethical Practices Aired**

A.I.A. members warned that insurance forms included among the standard documents did not cover all types of possible liabilities, but were a guide only to the basic types of coverage which a contractor or architect should have. Local conditions must always be considered with regard to special risks.

Unethical practices in alternate bid procedures were aired. Examples cited involved failure to notify all bidders of a change in specifications, and permitting the low bidder to correct an error after his bid had been accepted.

It was agreed that the jointly sponsored *Suggested Guide to Bidding Procedure* should be revised to cover these infractions of industry ethics. The meeting concluded with the recommendation that more local A.I.A.-A.G.C. committees be established.



Left to right: W. S. Parker, A.I.A., Boston; E. G. Conrad, A.I.A., Cleveland; W. A. Snow, co-secretary, A.G.C. staff, Washington; M. H. Foley, Voorhees, Walker, Foley & Smith, A.I.A. co-chairman, New York; A. H. Wells, John Griffiths & Son Construction Co., A.G.C. co-chairman, Chicago; T. I. Coe, co-secretary, A.I.A. national staff, Washington; E. W. Barker, Ellis W. Barker Co., A.G.C., Salt Lake City; and Harry B. Tour, A.I.A., Knoxville.

## Congress Directs DPA Effort To Increase Steel for Schools

- Latest Allocation Only 38% of Estimated Need
- Crowded Classrooms Popular Topic at Hearings

» OFFICIALS of the Defense Production Administration this month are reexamining their steel allotment schedule for possible adjustments after Congress asked the agency to provide more steel for schools and hospitals.

Congressional resolutions, adopted with strong support in both the House and Senate, came after criticism-packed hearings were held by a House Subcommittee on Education.

### Inadequate Allocation Charge

Testifying before the committee that the 1952 first quarter allocation of 96,000 tons is "totally inadequate," Congressmen, school officials and private citizens turned the heat on DPA to secure more steel for schools.

The committee heard U. S. Education Commissioner Earl J. McGrath report that the latest DPA allocation is only 38% of estimated total requirements. McGrath predicted an unprecedented school housing problem as the crest of a wave of new elementary enrollments engulfs the school system next fall. He estimated a need for 250,000 tons of steel to continue school construction during the first quarter of next year.

Glenn Stanton, president, American Institute of Architects, told the committee that the emergency in school building "should be frankly recognized for what it is."

### Witnesses Reveal Overcrowding

Other witnesses, many of them school superintendents, revealed cases of school children being taught in rented basements, attics, churches, lodge halls, and partitioned-off gymnasiums, stages and corridors. Many pointed out that the space problem, now serious, will be "infinitely worse" as 1.7 million more children swamp the school systems next fall.

A Californian, Melville Homfeld, said that, in spite of architectural redesigning, the Menlo Park, Cal., school building program has been stymied by rejection of steel applications. He told of planned buildings, requiring no steel above ground except bolts and nuts, no copper save in wiring, no

aluminum and no stainless steel, being held up for lack of foundation steel.

A New York state school official said that there are 218 building projects costing \$177 million in his state for which applications have been, or will soon be, filed with the U. S. Office of Education. He expressed little hope of obtaining the steel requested.

A number of Congressmen told of the need for schools in their districts or brought constituents in to tell of frustrated building plans. Dozens of other Congressmen submitted statements of conditions to the committee.

Statements from other states and cities showed that long-postponed school building projects are being stalled across the nation by the materials restrictions.

### Senate Passes Resolution

On the third day of the hearings, the Senate heard both Democrat and Republican members ask for diversion of more steel to schools. Commenting on a resolution to that effect, Sen. Leverett Saltonstall (R-Mass.) said that, despite the importance of steel for direct defense, Senators are duty bound to provide "adequate school buildings" for the nation's youth. He asked, also, that the resolution be amended to provide for hospitals.

The subcommittee called upon Manly Fleischmann, DPA administrator, for an explanation of what other witnesses had called an "indefensible" stand on the materials allocation to school projects.

Attacking the allegation that schools are getting only  $\frac{1}{2}$  of 1% of the total steel output, Fleischmann asserted the comparison was unfair. Schools, he revealed, are getting 14% of the concrete reinforcing bar steel and 1.6% of the structural steel.

He struck back at attacks on DPA's policy of allowing high production of automobiles by insisting that curtailment of automobile production would release carbon sheet steel, but not structural steel, for other uses. Furthermore, he said, steel plants turning out carbon steel cannot be transformed into structural steel producers.

When pressed about availability of

steel, Fleischmann said that steel could be given school projects only if it were taken from some other program. It would be a case of "robbing Peter to pay Paul."

He pointed out that school construction is at an all-time high in '51 and that 1952 volume should be only slightly less. The 96,000 tons allocated for the first quarter, he declared, would keep alive the 1400 projects now under way and allow 21,000 tons for approximately 300 new starts.

Fleischmann predicted that over \$1.6 billion worth of school construction will be completed in 1951. Applications have been submitted, he said, for about \$1.4 billion worth of construction in 1952 and DPA is granting materials for approximately 22% less than that volume.

Before recessing, the House passed a resolution much the same as that adopted in the Senate two days previous. It asked that DPA and NPA reconsider the allocations to schools and hospitals and to provide a greater amount of critical materials for their construction.

### New Materials Discussed

The National Association of Housing Officials in convention last month heard building materials experts tell of new developments in that field.

William Reed, IBEC Housing Corp., described a plastic sandwich construction facing material. Consisting of 20-gauge porcelain enamel steel with a Kaylo core, the product is claimed to reduce costs in maintenance, erection and structural framework.

Reed, speaking of concrete research, advocated development of new aggregates. "It is time to write a set of performance requirements and for industry to develop a cheap aggregate which would fit the need. The requirement of developing an aggregate which is structural, insulating, and suitable for a waterproof surface is not beyond the capacity of American scientific ingenuity," he said.

Karl Billner, Vacuum Concrete, Inc., a proponent of prestressed concrete methods, attacked building code discrimination against concrete. "When concrete is proposed," he noted, "the strength requirements for floors are several times what they will ever carry and walls have to be designed for about 100 times the load they support. Requirements for fire proofness are absurdly high."

# Toughies...



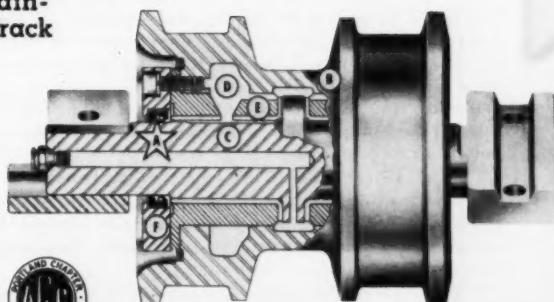
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**HIGHWAY BRIEFS**

A comprehensive study of Florida's entire arterial highway system has been authorized by the state road department. It is expected the study will bear out the need for a proposed \$100 million toll superhighway from Jacksonville to Miami.

\* \* \*

A proposed \$40 million bond issue to finance construction of a causeway across Lake Pontchartrain has been overwhelmingly approved by voters in the Louisiana parishes of St. Tammany and Jefferson. Plans and specifications should be ready within six months.

\* \* \*

Kentucky and Illinois have signed a contract to jointly build a multi-million-dollar toll bridge across the Ohio River at Shawneetown, Ill. Federal agencies have authorized the project, but materials needed have not yet been granted. Construction of the 3,200-ft.-long bridge could begin next spring if the materials need were satisfied.

\* \* \*

Maine voters have approved a \$27 million highway bond issue which, together with federal aid and other state funds, will raise \$98 million for construction and reconstruction of 1,600 miles of roads and bridges in the next seven years. Also approved was a \$2.5 million bond issue for a Penobscot River Bridge at Bangor.

\* \* \*

The Pennsylvania secretary of highways, Ray Smock, told an audience recently that road improvements last year rose to \$114.5 million. The state needs 140,000 tons of steel for its 1952 projects, but the tentative allocation is 28,000. New York has received 90 tons of steel from England, he said, and New Jersey, 60 tons from Denmark.

\* \* \*

The Bureau of Public Roads reports that 1950 saw over \$4.5 billion spent for highway purposes by all units of government in the United States.

\* \* \*

The Highway Research Board is undertaking a study of the parking problems of large cities—especially the effect of offstreet parking on street congestion, property values and taxes, and volume of trade.

**A. A. S. H. O. Asks 2% of Steel for Roads****• Highway Officials Urge Higher Priority for Equipment**

► A RESOLUTION urging the federal government to increase the allotment of highway steel to 2% of the national production was adopted by the American Association of State Highway Officials at its recent week-long meeting in Omaha, Neb.

The present allocation has resulted in "untenable conditions," the resolution asserted.

The statement also urged that priority of highway equipment be raised because of importance of highways to national defense and the economy.

In other resolutions, the highway officials:

- Opposed possible granting by the Interstate Commerce Commission of continuing or permanent authority to more than 50 trucking firms to transport explosives and ammunition

"promiseously" over streets and highways.

2. Urged steps be taken to further coordinate water resources projects and highway developments.

3. Asked immediate surveys by state, county and city highway departments on steel and iron scrap available and encouragement of its return to active channels.

New York State Public Works Superintendent B. D. Tallamy was unanimously elected president of the association, succeeding Virginia Highway Commissioner J. A. Anderson. Michigan Highway Commissioner Charles M. Ziegler was elected first vice-president, which is tantamount to the presidency next year. Iowa Highway Engineer Fred R. White was named to fill a five-year term on the executive committee.

**New Jersey Turnpike Opens This Month****• Finish 108 Miles of Channel Through Dense Industrial Area**

► THE NATION'S newest superhighway will open this month, marking near-completion of another major accomplishment by the construction industry.

Of the 118 miles of New Jersey Turnpike, 108 will begin to carry nonstop traffic from the new Delaware Memorial Bridge at the state's southern border to a point just below New York City in the north. The last 10 miles, due to open Jan. 1, will reach up to the George Washington Bridge, thus bypassing much of New York City.

**Built for High Speeds**

Knifing through the heavy industrial state, once a disheartening stretch for interstate travelers, the New Jersey Turnpike is channeling 60 mph. traffic with ease. The \$240 million concrete ribbon, a divided highway without grade crossings, was built to carry traffic at 70 and 75 mph.

There are no red lights and no left turns the entire 118-mi. length of the expressway. Acceleration and deceleration lanes, 1200 ft. long, are provided at the 17 interchanges. The new road is four and six lanes wide—the right-of-way, 250 and 300 ft. wide.

It has reputedly the world's heaviest roadbed, composed of a 4½-in. top layer of hot-mix asphalt, a 6½-in. sub base and a 7½-in. base of crushed rock. Under the base are 18 to 24 inches of frost-free material. The heaviest trucks can operate on it with a margin of safety.

**77 Major Contracts Let**

Up to last June 30, a total of 77 major and 35 miscellaneous contracts had been awarded, involving \$195 million for grading, drainage, structures, paving and other construction.

About 51 million cu. yds. of earthwork were handled on the job, as were almost 7 million sq. yds. of concrete and over 188,000 tons of steel.

The highway problem has been acute in New Jersey for years. Besides containing within its borders a very dense population, practically all traffic between Philadelphia and Washington, D. C., to New York passes through it. As a "corridor," the state has been forced to strengthen its facilities to carry this traffic stream. The turnpike, carrying vehicles around the large cities, is expected to free another bottleneck on the Atlantic Coast road system.

## Progress Predicted on New York Thruway

### • Year-End Goal—Unroll 140 of Superhighway's 535-Miles

**» CONSTRUCTION** on the New York State Thruway is well in stride, according to the most recent progress report, and 140 miles will be under construction or completed at the end of this fiscal year.

The Thruway Authority still hopes to complete the 535-mile New York City-to-Buffalo stretch in 1954. Only the threat of further materials restrictions would bar scheduled completion of the road, officials believe.

At present, 70 miles are under construction and 18 miles are already open to traffic. When finally finished, the main route will span the Empire State practically from border to bor-

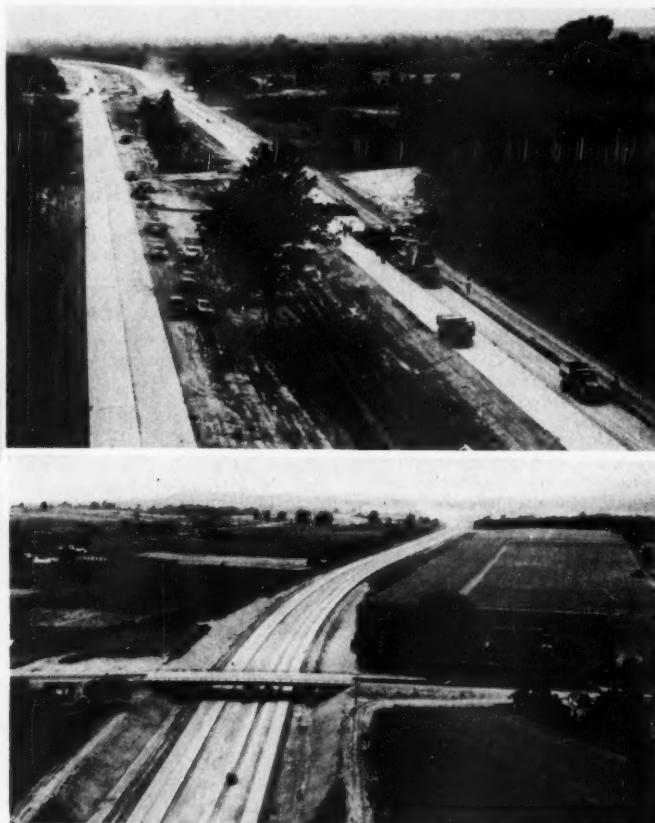
der and, with its 100 interchanges, form a vast traffic pattern.

The magnitude of the \$500 million project may be realized in the amount of materials required—2 million cu. yds. of sand, over 7 million bbls. of cement, 4 million cu. yds. of stone, 4.5 million cu. yds. of concrete pavement, and 92,000 tons of steel.

#### Plan Hudson River Crossing

The superhighway will bridge the Hudson River at Tarrytown—a major project in itself. The 525 structures of various types along the route will take 178,000 tons of structural steel.

Some 2,400 engineers and 18,000



Above, the New York Thruway, partially completed, stretches across the state. Below, a paving scene on another section of the new superhighway. The mall in the center will be 150 ft. wide in some sections.

men will be employed on the job until it is finished.

The Thruway will have a "healthy effect on other highways in the state," according to the commission, by relieving their loads and reducing their maintenance costs.

"The resulting reduction in state highway costs in turn will make possible further expansion of the state's highway construction and reconstruction from the regular highway budget in the cities of the state and in the northern and southern tiers," the report stated.

It added, "Much of the work of reconstructing the existing state highway system is under way now and much more is planned for the immediate future in order to increase the usefulness of these roads as feeders to the Thruway."

## Rosen Exposes Steel Need

The curtailment of highway construction and maintenance poses a threat that must not be ignored, Milton Rosen, retiring president of the American Public Works Association, told the group recently in Detroit.

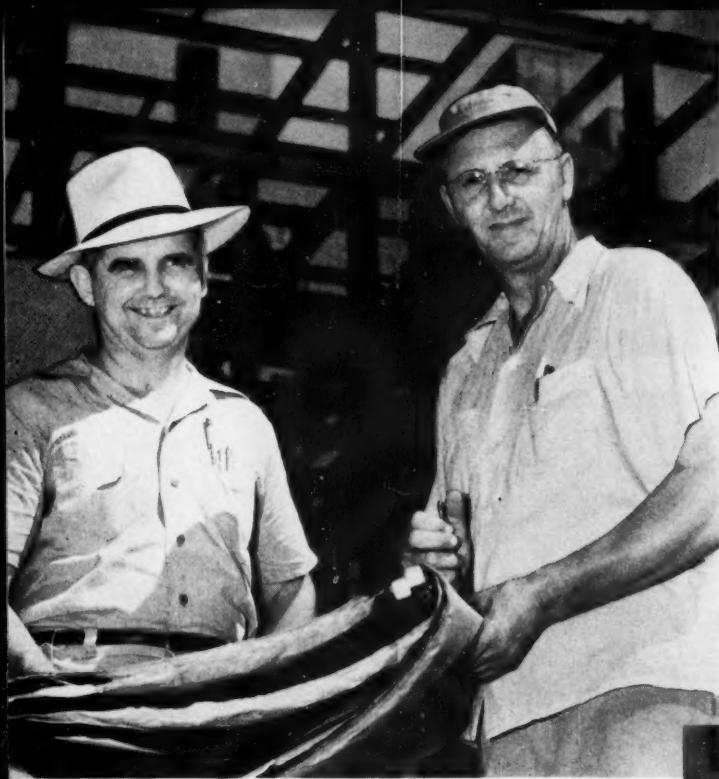
Referring to the rapid deterioration of the nation's highway system during World War II and failure to reconstruct since, Rosen said, "We have made little or no progress in the past 10 years to bring our highway systems to the point where they will meet normal peacetime traffic demands. We haven't even begun to make them capable of carrying the burden of wartime traffic."

He predicted that, in spite of increasing traffic and need for new highways to carry it, there would be a decline of one-third in the volume of construction "during the months just ahead."

The inept machinery of the controlled materials plan is responsible for another cut in highway projects, Rosen claimed, causing losses of "as much as 25%" of original allotments because steel could not be obtained from the mills.

He urged fellow members of the public works organization to push for more critical materials for essential road construction.

80% of the counties of South Dakota have participated since 1946 in local road construction programs with the aid of \$8.4 million in federal funds.



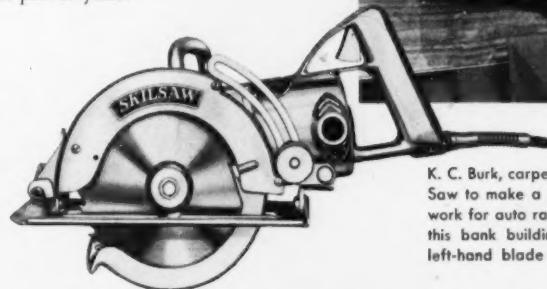
"We've used  
**SKIL** Saws  
for 20 years  
...best all around!"

says **Mr. A. O. Reine**  
construction superintendent of the  
**TELEPSEN**  
**CONSTRUCTION COMPANY**  
Houston, Texas

Mr. Reine (right) interrupts his discussion with C. H. Graham of this construction firm to say, "We choose SKIL Saws for our construction work because they have the right r.p.m.'s for all-around work. SKIL makes all cuts with minimum effort and time." He adds, "Take this current project. With four SKIL Saws we will complete this six-story bank building on a record schedule. It has required cutting 1,200,000 board feet of lumber in 300 working days. In our book, SKIL delivers top performance. And that means for the past 20 years!"

**SKIL Saw  
Model 77**

One of the 10 models. 7 $\frac{1}{4}$ " saw. Full base adjustments for 0° to 2 $\frac{3}{8}$ " vertical depth of cut; 0° to 45° bevel adjustment, 1 $\frac{1}{4}$ " depth of cut at 45°. 3200 r.p.m. no-load speed. Over-all length: 17 $\frac{1}{4}$ ". Weight: 15 $\frac{3}{4}$  lbs.



K. C. Burk, carpenter, here uses a Model 77 SKIL Saw to make a difficult cut in the concrete form work for auto ramp to interior parking section of this bank building. "Only SKIL Saws with the left-hand blade could make this cut!", he says.

**Call your SKIL Distributor for complete information**



SKIL products are made only by SKILSAW, Inc.  
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SKILSAW Factory Branch Offices in  
34 principal cities — In Canada: Skitools, Ltd.  
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# From Boulders



ONE OF SIX INTERNATIONAL TD-24s WORKING ON U.S. 99



# to Boulevard

## A. Teichert & Sons tackle huge highway job on U. S. 99 in California mountains

Fifty miles north of Los Angeles, A. Teichert & Sons are changing the face of California to modernize the main road to San Francisco.

They're digging into the rough, rocky hills with six Big Red TD-24s . . . charging in with International power to move over a million yards of boulder-filled earth—doze out cuts down to 350 feet deep—reroute a creek channel to eliminate present bridges—turn today's three-lane U. S. Highway 99 into a four-lane traffic-separated superhighway.

Teichert chooses TD-24s for the job because they're the Champs for this grueling, heavy-duty work. Here's why:

**TD-24 Power**—148 maximum horsepower at the drawbar, more than any other crawler on the

market. Moves more dirt per hour.

**TD-24 Speed**—8 forward speeds, 8 reverse. Moves loads faster, gets out and gets in again faster for a faster work cycle.

**TD-24 Operation**—Synchromesh transmission, you shift "on-the-go." And you go up or down one speed without declutching.

**TD-24 Steering**—Fingertip steering for pivot turns, feathered turns, turns with power on both tracks.

**TD-24 Starting**—Push-button starting in any weather.

Ask your International Industrial Distributor for details on the TD-24. Consider his on-the-job service and complete shop facilities, at your call through the years ahead. Get the whole low-down! You'll be a TD-24 man from them on in!

International Harvester Company, Chicago 1, Ill.

## INTERNATIONAL



## POWER THAT PAYS



**1,200,000 YARDS TO MOVE**—and one of A. Teichert's International TD-24s gets at it. Among crawler tractors, the Big Red TD-24 is the Champ, with more power and speed to move more paydirt per day.



## Reclamation Assn. Convention Endorses Limits on Day Labor

- Straus Describes \$243 Million Program in 1951
- General Pick Praises Inter-agency Cooperation

» THE NATIONAL Reclamation Association convention in Amarillo, Tex., last month surveyed the vast scope of water resources development throughout the nation and, in passing 37 resolutions, advocated a permanent policy of limitation of force account work by the Bureau of Reclamation.

Michael W. Straus, commissioner of the Bureau of Reclamation, told delegates that the bureau had enjoyed "an outstanding year, constructionwise." He pointed out the completion of four dams—Bonny, Cedar Bluff, North Coulee, and Dickinson—in the course of a \$243 million program.

"Three more giants—Boysen, Canyon Ferry and Hungry Horse," he said, "loomed higher in their canyons. The Colorado-Big Thompson draws nearer to the finishing line, set at 1953."

Straus spoke optimistically of projects authorized or being planned for the future—the Eklutna project in Alaska, the Canadian River project in Texas, the Palisades Dam in Idaho, the Central Arizona project, and the Hells Canyon project on the Snake River between Oregon and Idaho.

He noted that new authorizations and new starts must be injected into the reclamation program. Current jobs are being steadily finished.

### Pick Hails Inter-agency Idea

Also invited to address the gathering, Gen. Lewis A. Pick, chief of Army Engineers, paid tribute to inter-agency plans for developing water resources.

"No other scheme has been proposed or evolved which pools the best experience and thinking of all minds concerned with the same problem—federal, state and local," he said.

The top Corps of Engineers officer testified to good working relationships with the other federal bureaus engrossed in flood control, power and reclamation problems in the nation's river basins.

"The inter-agency basin committee approach to watershed problems and projects invites cooperation and teamwork. It mobilizes state and local in-

terests as partners with the federal departments."

He praised the work of the Missouri Basin Inter-Agency Committee, composed of representatives of several federal agencies and the governors of the basin states, and reported current progress on the group's program for taming the Missouri River.

That program is now 25% complete, he said, and construction is under way on another 40%.

In other sections of the country—the Columbia River basin, the Arkansas-White-Red River basins and the New England-New York areas—the inter-agency committee idea is giving local inhabitants their just participation in resource development programs. Describing the public hearings in those localities, General Pick said, "No other scheme . . . is so distinctively in the American tradition."

### Favors Force Account Limits

Among the 37 resolutions adopted by the National Reclamation Associa-

tion were two of particular interest to the construction industry.

One stated the organization's desire to push authorization of new projects, even if construction must be delayed because of the present emergency. The other endorsed the general pattern set forth in the Department of Interior's 1952 appropriation bill, which established the policy of limiting the amount of construction to be done by force account. The convention asked that the policy become permanent in the Bureau of Reclamation program.

The organization's newly elected officers are: Petrus Peterson of Lincoln, Nebr., president; Charles L. Kaupke of Fresno, Cal., first vice president; Earl T. Bower of Worland, Wyo., second vice president; Herbert L. Buck of Billings, Mont., treasurer; and William E. Welch of Washington, D. C., secretary-manager.

A HOUSE Subcommittee of the Committee on Executive Expenditures is expected to hold hearings on Missouri Basin Water Resources development early this fall, probably first in Washington, perhaps later in the field. *Reclamation News*, in reporting the prospects, said, "This could be a backdoor approach to valley authorities with a favorable recommendation to the House."

### N.R.A. Force Account Resolution

Following is the resolution passed last month by the National Reclamation Assn. endorsing Interior Department's force account limitation.

"WHEREAS, the National Reclamation Association approves the traditional policy of performance of construction work through the letting of contracts by competitive bidding; and

"WHEREAS, the National Reclamation Association realizes that there are circumstances and conditions including management and operation, maintenance and repairs, engineering and supervision, minor construction work and emergencies local in character, under which the interests of the public may be best served by permitting a limited amount and definite type of construction work to be done by force account; and

"WHEREAS, the National Reclamation Association believes that restrictions which have been placed in the Interior Department's bills during the past several years relating to Bureau of Reclamation construction appropriations upholding the traditional policy of construction by contract but at the same time permitting a limited and necessary amount of work by force account have proven to be, in the main, quite satisfactory;

"THEREFORE BE IT RESOLVED that the National Reclamation Association endorses the general pattern set forth in the Interior Department's appropriation bill for the fiscal year of 1952 establishing the policy of construction work by contract and limiting and defining the construction work to be done by force account and urges that such a program be made a permanent policy within the Bureau of Reclamation."

Such a policy has been consistently sought by The Associated General Contractors of America.

### Coal Transport by Pipeline

Volume transportation of coal by pipeline with water is feasible, according to a preliminary study by the U. S. Bureau of Mines.

A 100-mile line capable of transporting 5,000 tons per day could be built for about \$10 million, after which the cost of movement would be between \$1.28 and \$2.01 per ton. Cost of building a line with 7 times that capacity would be only  $2\frac{1}{2}$  times the cost of the 5,000-ton line, and the per-ton cost of movement would be drastically lowered.

The Pittsburgh Consolidation Coal Co. is planning a full-scale demonstration pipeline in Ohio to pump finely ground coal mixed with water for a distance of about 3 miles.

The bureau's study, authored by R. W. Dougherty, Louisiana, Mo., industrial engineer, gives estimates of costs for construction, taxes, interest, depreciation, maintenance, and related expenses. The report is called "Report of Investigations 4799—A Survey on the Hydraulic Transportation of Coal," and is available at no charge from the Bureau of Mines' Publication-Distribution Section, Pittsburgh.

### Power Expansion Surveyed

An inquiry into the nation's power needs has been sparked by the unprecedented industrial expansion of the defense effort. How many power plants will be needed during the next few years will be determined by a committee of four experts appointed

last month by the Defense Production Administration.

Already, DPA reveals, plans have been made for a 40% power expansion. It will be the committee's duty to review these plans and determine the number necessary to meet defense needs.

#### Calls Power Needs "Critical"

The chief of Defense Electric Power Administration, Clifford Beardsley, said recently that the power needs of several areas are "critical" and the nation as a whole faces through all of 1952 and probably into 1953 "the possibility of a serious shortage."

Even the steel expansion program has been pinched in areas, he said, by the lack of power. Furthermore, the lead time for building new power plants is from three to five years, or even more—a factor overlooked by many people, Mr. Beardsley noted.

### Heavy Construction Notes

A three-firm organization has won the contract for the Eklutna Tunnel project in Alaska on a bid of \$17,358,865. The 4-mi. long, 9-ft. water diversion tunnel will be built by Palmer Constructors, a group composed of Peter Kiewit Sons, A.G.C., Omaha, Coker Construction Co., and Morrison-Knudsen Co., A.G.C., Boise.

\* \* \*

Plans are proceeding for a \$12 million four-lane toll bridge across the Mississippi River at Kansas City.

\* \* \*

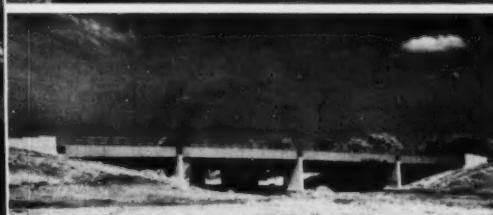
Advisory engineers have reported that contracts for a new \$12 million dam at Columbus, Ohio, could be let by next June. The project, to be known as Hoover Dam, will be 3000 ft. long, including a 680-ft. long spillway section.

### The Most Beautiful Bridges of 1950

The American Institute of Steel Construction has named three bridges as the most beautiful structures opened to traffic in 1950. They are: (left) the South Holston River Bridge on Tennessee State Highway 34, which was awarded a steel plaque for leading the class with spans under 400 ft. in length and costing more than \$500,000; the Columbia River Bridge (upper right) at Wenatchee, Wash., winning honors in the class with spans 400 ft. or more; and the Caldwell Avenue Bridge (lower right) over the Edens Expressway, Cook County, Ill., receiving the award in the class with

spans under 400 ft. and costing less than \$500,000.

The South Holston River Bridge was designed by the Tennessee Valley Authority and fabricated by the Virginia Bridge Co., Roanoke. The Columbia River Bridge was designed by George Stevens, Washington State Department of Highways bridge engineer, and it was fabricated by the American Bridge Co. The Cook County Highway Department designed the Caldwell Avenue Bridge and Bethlehem Steel Company was the fabricator.



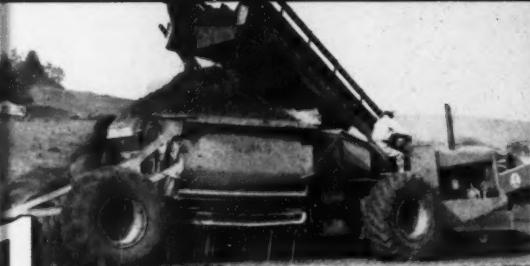
# CHECK

## these 8 TOURNAHOPPER advantages

against your bottom-dump requirements

New 18-yd., 18-ton "C" gives you:

1



**FASTER LOADING** — Short, wide 9'x11' top opening requires minimum movement, minimum time to "top out" under belt loader. Shovel or dragline operator has easy target, low 8'9" loading height that speeds swing, reduces spillage.

2



**LESS JOCKEYING IN TIGHT QUARTERS** — 90° turn within 15'8" radius, together with positive power steer, get 186 h.p. Tournahopper to and from loader in a hurry. Also gives fast maneuvering on winding pit roads, along narrow levee tops.

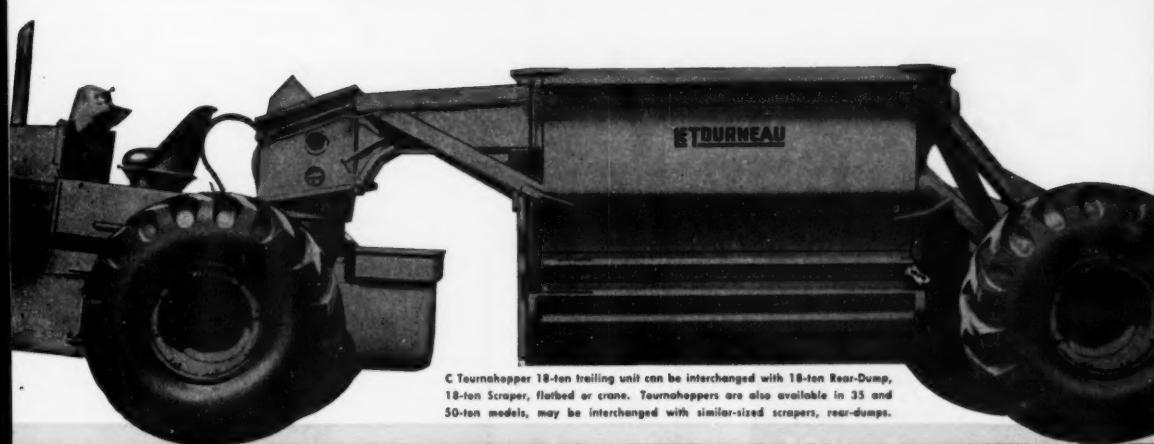
5

**FAST TURNS OFF FILL** — 23" clearance (with gates open) and 15'8" turn radius permit fast dump and quick turn over windrows even when turning down steep side slopes. You can also back up and swing 90° to clear up to 42" boulders.

6

**FAST DUMPING — NO GATE DAMAGE** — Clamshell-type gate action clears load, eliminates gate damage when dumping rock. Independent electric power opening allows rig to stop over hopper, dump without having to be in motion.

R. G. LeTOURNEAU, INC.  
PEORIA, ILLINOIS



C Tournahopper 18-ton trailing unit can be interchanged with 18-ton Rear-Dump, 18-ton Scraper, flatbed or crane. Tournahoppers are also available in 35 and 50-ton models, may be interchanged with similar-sized scrapers, rear-dumps.



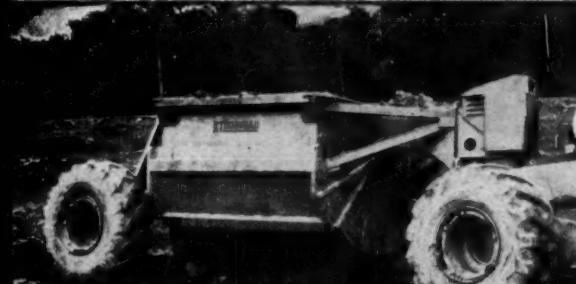
# 3

**KEEPS GOING IN SOFT FOOTING** — Power-proportioning differential,  $5\frac{1}{2}$  h.p. per ton of gross weight, and rotation of 21.00 x 25 low-pressure tires help rig go through spongy, wet going that frequently stops conventional bottom-dumps.



# 4

**SAFETY PLUS, EVERYWHERE** — With 4-wheel, multiple-disk air brakes (3763 sq. in. total braking surface), and instant-acting electric controls, operator can drive loaded Tournahopper up and down steep grades with complete safety.



# 7

**NO HAUL-BACK OF STICKY MATERIAL** — Gates swing aside and up across full width of bottom, wipe clean, eliminate haul-back of gummed-in material. Whatever can be loaded in the big top opening dumps clean.



# 8

**OPERATOR COMFORT — MORE PRODUCTION** — Fingertip electric controls, foam-rubber seat, full visibility lessen operator fatigue. Low-pressure tires cushion load and road shocks, help operator work fast, all day long!

*Mail today to:* R. G. LeTOURNEAU, Inc., Peoria, Illinois

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

Type of work to be handled \_\_\_\_\_

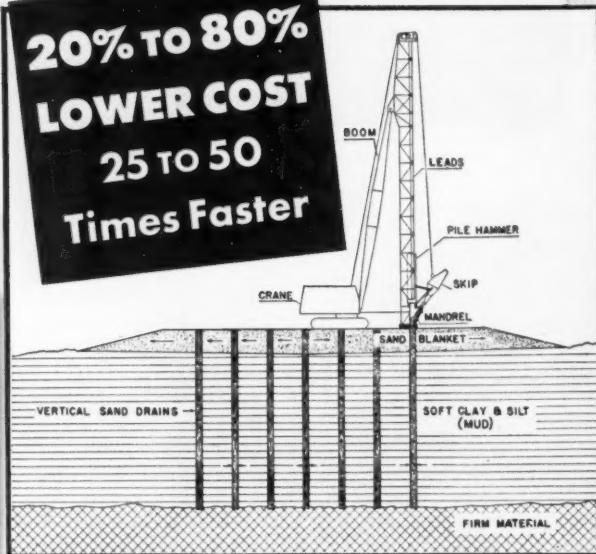
Please send complete information on:

- bottom-dump Tournahoppers
- 18-ton    35-ton    50-ton
- rear-dump Tournrockers
- 9-ton    18-ton    35 or 50-ton
- Tournapulls
- 7-*yd.*    14-*yd.*    27½ or 44½-*yd.*

LET  
EQUIPMENT

# Settling marshy ground...

**20% TO 80%  
LOWER COST  
25 TO 50  
Times Faster**



SAND DRAINS . . . the new development for dehydrating marshy ground has provided permanent soil stabilization on important jobs far quicker and at much less cost than any other method.

This method makes use of readily available sand and borrow, and is successful for depths even up to 100 feet and more.

McKiernan-Terry equipment has been used for driving hundreds of thousands of Sand Drains for highways, airports and earth dam foundations. This equipment has been specially designed for the purpose and has been fully proven in service.

McKiernan-Terry Sand Drain equipment is available to contractors all over the country. Write for bulletin describing the operation of this equipment in marsh and swamp reclamation work, and for advice on equipment for your special needs.



**MCKIERNAN  
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**SAND DRAINS**

*Write for Bulletin 61 on Sand Drains*

MX310

**McKIERMAN-TERRY CORPORATION • MANUFACTURING ENGINEERS • 18 PARK ROW, NEW YORK 38, N.Y.**

» THE international situation and America's increasing defense efforts have created abnormal demands for construction equipment. Among those in the greatest demand are power cranes and shovels.

This unprecedented call for new power cranes and shovels has also accelerated the demands upon equipment already in use. As long as the present shortage of new equipment for normal civilian requirements exists, it becomes increasingly vital to keep existing equipment in the best operating condition. In times like these, delays and shutdowns become especially costly and can usually be prevented by planned care and preventive maintenance.

#### "Breaking in" Period

The most important period in the lifetime of a crane or shovel is when it is first placed in service—when the customer is becoming accustomed to the machines. That is why it is essential that this piece of expensive equipment be started off properly by qualified servicemen. And the qualification of the servicemen is the responsibility of the dealer selling the equipment.

Proper instruction covering all adjustments, care and points of lubrication is important at the time of delivery. Since there will always be a labor turnover, it is essential that operating instructions be handed down from one operator to another in the event that the employee originally familiar with operating instructions leaves for another job.

## Shovel and Crane Service Tips

### • Good Maintenance Need Highlighted by Shortages

By A. E. York

Service Manager, Link-Belt Speeder Corporation

Too often, a new shovel or crane is deadlined because of improper care and lubrication after the machine has left the factory. In many cases the problem of too much grease is almost as serious as too little lubrication. Since the danger connected with lubricating certain points is covered at the time of delivery, the customer should see that the information reaches the proper personnel.

Systematic care and maintenance can usually be developed by following carefully the manufacturer's operating and instruction manuals. This includes not only proper care and lubrication, but also keeping the machine clean, and making regular periodic inspections of the equipment—inspections which will reveal necessary normal adjustments, and which will assure the proper replacement of parts at the right time.

#### Care of Old Equipment

In the case of old equipment, certain steps should be taken to prolong the natural life of the machine. A few precautions can greatly extend the time between major overhaul jobs.

Lubricants, motor oils and greases should conform to manufacturers' recommendations, and should be products

of reputable firms. Regular intervals of lubrication will eliminate the "guess-work" concerning the number of hours worked. Manufacturers' charts on seasonal changes in viscosity should be followed closely.

#### Check Lubrication Tubes

One important detail to remember is the periodic examination of lubrication tubes. Too often it has been discovered too late that a grease tube has failed or become clogged, and that grease was not reaching its intended goal. When that happens, some bearing will fail for lack of grease, which may also result in damage to a shaft or other important part. Replacing such shaft or part is often difficult and may result in a long, costly shutdown which could readily have been prevented by careful maintenance.

Clutches should be inspected closely to make sure they are maintained in good condition and adjustment. It should be determined whether or not the clutch is wearing properly. Linings should be examined closely and kept clean and free from grit and other foreign particles to eliminate scoring of drums. Center pins should be checked and tightened as needed. Drive chains should be kept in adjust-



Left: Tough work for this K-360 1 1/2 yd. shovel will proceed quickly with oiler on his toes. Right: Major shovel-crane repair should not be undertaken without careful planning, which will result in a reduction of downtime.



ment, and sprocket chains examined for undue wear. Bushings should be watched to avert shaft scoring. Engine filters must be changed at specified intervals to safeguard the power plant of the machine.

Good maintenance also entails the advance ordering of needed parts. Many parts, such as linings, cables, dipper and bucket teeth, and the like, are essentially wearing parts, and must be replaced periodically. It is essential that such parts be kept on hand for quick and convenient replacements. There are other parts which, experience dictates, should be kept on hand to avoid costly shutdown and delays when such replacements are needed. By periodic and systematic inspections, it is also possible to anticipate other required replacements, and to have such parts on hand to install at the most convenient time. This is especially important now when replacement parts may not be available as quickly as in normal times, and when uninterrupted operation is more important than ever.

#### Cleanliness Is Necessary

Machine cleanliness is paramount in good care and maintenance. Good "housekeeping" is conducive to good care and maintenance, and a well cared for machine is invariably also a clean machine. Pride in keeping the machine clean will instinctively encourage the operator to pay close attention to the proper care and mechanical condition of his machine, the importance of which cannot be stressed too strongly.

Periodic cable inspection is vital in all machines. A frayed cable should be promptly replaced, particularly if it is a load-carrying cable. Although it may be subjected to little actual running wear, the boom hoist cable—which is a load-carrying cable—also should be inspected frequently, since its failure could well result in serious damage or even personal injury. In these inspections, all cable connections should also be checked.

#### Overhauling Important Now

Overhaul jobs, which in normal times may have been undertaken without too much forethought, assume major proportions in times of emergency such as the nation is currently undergoing.

First step in such an overhaul job must be to determine the extent of the job. This calls for a detailed study and examination. Ordering additional

## C.I.M.A. Campaigns for More Materials

As the first shot in a program to convince government control agencies of the essentiality of the construction machinery industry, the Construction Industry Manufacturers Association has published a brochure entitled, "Construction Machinery Is Essential to the Nation's Mobilization for Defense."

Prefaced with a statement by C.I.M.A. President Julien R. Steelman on the scope of the industry, the booklet lists major items of construc-

material after the original order has been sent in can be avoided by making a careful first estimate. Definite shipping dates should be received. Better yet, no equipment should be disassembled until all material is on hand. Not too infrequently, a small item out of a large order can tie up a major repair job because of some supplier's inability to live up to a promise.

Local facilities for the job to be done must be explored to make certain the job can be completed in the least possible time. If local sources prove inadequate, improvisations can usually be made. Often it is wiser to move the equipment nearer to the proper facilities for repair and overhaul.

#### Parts Can Be Rebuilt

With the present material shortage at hand, consideration should be given to rebuilding parts, especially those which can be welded to return to original dimensions. Track sprockets, track rollers, track shoes—all can be rebuilt with hard surface rod to extend the life of these parts. Bores that have been worn oversize, can frequently be welded and reborod to standard size so as to make future replacements easier. Shafting—depending upon application—can sometimes be metal-sprayed satisfactorily. When possible, a plating process should be used to salvage shafts.

Complete overhaul jobs, if properly planned, can be accomplished with a minimum amount of down time even considering the present scarcity of material.

Proper equipment maintenance is doubly important in such a situation as the nation is facing today. With material shortages and replacements parts harder to obtain, it is vital that existing equipment be carefully serviced to provide longer life and a resultant better performance.

tion equipment and machinery, then details the uses of these items in military combat, expansion in defense and major industries, and the various types of other construction.

#### Can't Meet Defense Needs

"Under present material allocation this industry cannot even serve direct defense needs," Mr. Steelman stated. "Unless additional materials are forthcoming immediately, the industry will be forced to curtail operations to a level that will damage all aspects of the defense mobilization program." To show the versatility and need for construction machinery under normal conditions, in the present program, and in case of all-out war, the following table of estimated distribution of the industry's products is printed:

Use	PERCENTAGE DISTRIBUTION		
	Normal	Now	All-Out War
Military combat.....	0.5	25	75
Military & defense construction.....	1.5	12	3
Mining & quarrying.....	20	18	9
Agriculture.....	10	10	4
Logging.....	5	5	
Petroleum.....	5	5	1
Industrial (material handling).....	5	5	2
Essential highway.....	30	10	4
All other (construction).....	23	10	1

Harold F. Hess, C.I.M.A. executive vice president, said further steps are planned by the Public Relations Committee, including a complete survey among firms.

## Manufacturers' Reports Urged

Construction machinery manufacturers should report in detail their shipment patterns and the materials needed to insure adequate supplies for the production of urgently needed military items, the Power Crane and Shovel Industry Advisory Committee recommended to the National Production Authority early in October.

NPA estimated that purchases for combat use are about 25% of the units being produced. NPA officials advised that military or atomic energy orders bearing the new DX symbol must be filled even if they displace DO orders, and even if the manufacturer has already accepted DO orders for 50% of his production as required by Order M-43.

# BUCKETFUL



## of Cost-Cutting Features

When it comes to cutting loading costs...stepping up profits, the Oliver Model "B" Crawler and Ware Loader is "loaded" with *plus* features.

Take the hydraulically controlled bucket, for example. 110° bucket rotation and 28° "tilt back" give you a full bucket every time. "Breaking out" action is 3 times the lifting effort of the loader...a particularly important advantage when loading out hard-packed material or for stripping operations. Bucket level is automatically maintained when lifting load, preventing wasteful spillage. You can control speed of discharge...fast or slow, easily and gently. And, even with the "tilt back" action, you still have a 32° (from vertical) dump angle...a control range no other

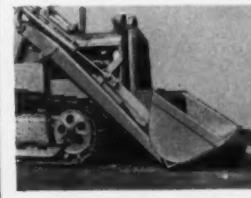
loader can match. You get bigger loads...*faster!*

The Oliver-Ware "B" loader was designed and built exclusively for Oliver Model "B" tractors. Its ideal fit with the tractor eliminates unnecessary dead weight and assures maximum stability for the entire unit. The Oliver semi-rigid axle allows limited oscillation of the track, eliminating the possibility of track-frame distortion. A hydraulic shock absorber smooths out pressure surges...prevents damage to loader and tractor parts.

For complete information on how the Oliver-Ware Model "B" tractor loader can cut costs for you, see or write your Oliver Industrial Distributor.



Plenty of power, plus the wide angle of bucket rotation, assures faster, more positive digging. 28° "roll back" assures maximum break-out action for a full bucket every time.



## THE OLIVER CORPORATION

Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio

A complete line of industrial wheel and crawler tractors





## U. S. Affiliated Reserve Units in Training

The 844th Engineer Aviation Battalion, an affiliated reserve unit (shown on parade above) sponsored by the Memphis Chapter, Associated General Contractors of America, has received its alert. The outfit, one of the largest reserve organizations in the Memphis area will enter service on Mar. 1, 1952, at Ft. Huachuca, Ariz.

The 844th Engineers was rated second best of 40 units in training at Ft. Leonard Wood, Mo., this summer. Instructors commended it for outstanding performance. Lt. Col. Raymond Welch, chief engineer for Seth E. Giem & Associates, A.G.C., Memphis,

commands the engineer battalion.

Members of the 821st Engineer Aviation Battalion, located at Trenton, N. J., are shown in action (below) rebuilding an airstrip at Wheeler-Sack Field, N. Y., during recent maneuvers there. The unit, sponsored by the New Jersey Chapter, A.G.C., will be at Pine Camp for Operation "Snowdrop" this winter. Commanding officer is Lt. Col. George J. McCann of the New Jersey Highway Department and the instructor for this project was Maj. Frank Bohren. All personnel are from the Trenton vicinity.



## Arctic Exercises Proposed

In a joint military exercise, American and Canadian army engineers will learn the art of constructing emergency airstrips on frozen lake surfaces and shifty muskeg.

Some 300 U. S. engineers and 150 Canadian engineers will move into the exercise area in Canada's cold Yukon Territory next January. There they will tackle their unique construction job and, in addition, test capabilities of equipment and personnel under varying arctic weather conditions.

## Thirteen Armories Planned

The Department of the Army has announced plans to build 13 Reserve Corps armories costing \$4 million.

The facilities, estimated cost ranging from \$200,000 to \$400,000, will be built in Tucson, Ariz., San Bernardino and Los Angeles, Cal., Wichita, Kan., Lexington, Ky., Baltimore, Md., Worcester, Mass., Toledo, Ohio, Wilkes-Barre, Pa., Greenville, S. C., Knoxville, Tenn., Richmond, Va.

## Unit Commanders Reunited

After 15 years' separation, two men who attended high school and college together have met as A.G.C. unit commanders at an Arizona training base.

Upon leaving college, Lt. Colonel A. K. Ries and Lt. Colonel G. E. Shaw each followed the construction profession into widely separated parts of the country. Both are now in charge of battalions training at Fort Huachuca.

Lt. Colonel Ries commands the 841st battalion sponsored by the South Florida Chapter, and Lt. Colonel Shaw commands the 843rd, sponsored by the Indiana General Contractors' Association. Also stationed at Fort Huachuca is Lt. Colonel R. E. Philbeck, commander of the 840th Engineer Aviation Battalion sponsored by the Knoxville and Tri-Cities Chapters, Tenn.

New legislation has been passed to allow grants to prospective builders of Navy rental housing units which have been held up by rising costs in land, installation of public utilities and site preparation. About 23,450 apartments under 30 contracts have been delayed because original cost estimates were out-dated by inflation.

**Texas Unit Training Recruits**

WELDING professional engineers and unskilled laborers into efficient military units is the job of the 950th Engineer Aviation Group at Ft. Leonard Wood, Mo. From such a mixture of experienced construction men and unlearned recruits, it is expected to turn out the tight, fast-moving battalions that build, maintain and protect the groundworks of the Army Air Force. The mission calls for men who can not only do that job themselves, but can train others—effectively and fast.

Such men were found in Amarillo, Tex., where the unit was first formed over three years ago under local A.G.C. sponsorship. There, the engineers and contractors of the 950th were first organized into the group which is now passing on its wealth of civilian experience and military training to green troops.

The 950th Engineer Aviation Group was called to active duty in November, 1950. At Ft. Leonard Wood, enlisted men with no previous service experience were given basic training and veterans got a refresher field training course. Squad tactics, map reading, infiltration and close combat instructions were drilled into group personnel.

The same day the unit finished its own training program it was assigned four battalions and one engineer aviation maintenance company to orientate. The pressure of events in Korea had made it a valuable group.

Under the direction of Lt. Col. Justice Neale, commanding officer, the recruits were assigned to such sections as administration, intelligence, operations, supply and personnel. Sent to various schools, some of the men learned construction skills—scraper operation, truck driving, automotive mechanics, dragline and bulldozer operation—and others studied the supporting services which even engineer units depend on—cooking, typing and drafting.

Thus organized into well-rounded units, the battalions undertook a typical war zone exercise—the construction of an airfield. Interrupted realistically by mock enemy air raids, their intensive training under the 950th underwent a rigid test.

**Graduation exercises; building an airfield.** (Top right) taking elevations. (Middle right) laying the pavement. (Bottom right) relaxing after a day of field training. (Below) Officers of the 950th: (Seated) Maj. David Britain, Lt. Col. Justice Neale, Maj. Edmond Timmons; (Standing) Lt. William Foran, Lt. Oscar Shilling, Capt. Donald Rose, Lt. George Rouse, Capt. Ormond Wright, Capt. Milton Schulze, Lt. Berl Springer, Lt. Cabot Dysart, and Maj. Al Jenkins.





## 3 ADVANTAGES IN BARNES

"33,000 For 1" Pumps

## THAT CAN AVOID HEADACHES

### NO SOFT SPOTS TO WEAR ON WATER SEAL

The two wearing parts on the Barnes Super Seal are hardened steel. You have steel on steel. There are no soft spots to wear. Since the grease seal is automatically lubricated, pump can be run dry without damage to either pump or seal.

### NO RE-CIRCULATING CHAM- BER TO CLOG

Barnes "33,000 for 1" Pumps do not have either a re-circulating chamber or port. Cement-water, stones, twigs, leaves and such will not clog the pump.

### NO COSTLY REPAIRS TO KEEP PUMP VOLUME UP

capacity and performance of high vacuum readings of 25" of mercury and 27 to 28 foot-lift of water.

Simple impeller adjustment takes up wear of impeller. It is simple and inexpensive to restore pump to its original

COMPLETE LINE FROM  
4,000 TO 90,000 G.P.H.  
CHOICE OF ELECTRIC,  
DIESEL, GASOLINE, OR  
PULLEY DRIVE.



BUY THE BEST . . . BUY BARNES



» SAFETY RULES are simple but they won't apply themselves.

For those in doubt about the profitable results which stem from a vigorous safety program on the job, or how to apply the rules, John A. Volpe, Volpe Construction Co., had an important message.

Speaking before the Construction Section of the National Safety Conference during its 39th annual convention in Chicago last month, Mr. Volpe outlined the safety program which has saved his firm "thousands of dollars" during the past few years.

Here are the elements of the safety program which moved the Volpe firm from a 16% insurance debit to a 24% credit, and which the Malden, Mass., builder recommended to his listeners in the course of listing "100 Ways to Save a Buck":

**Secure and maintain top management's interest**—Too often firm executives, devoting all their time to planning and production, overlook the assets of accident prevention on the job.

Insurance costs are one variable which can improve a firm's competitive position when contractors' material costs are generally the same. With direct costs from construction accidents averaging around \$750 each, and indirect costs soaring to three and four times this amount, executives who overlook the elements of safety are missing a big opportunity for economy. Only through a good accident record can a firm's insurance rating improve.

### National Safety Congress

## Good Accident Prevention Saves Money

### • Volpe Cites Methods in His Successful Program

Employees' interest in safety cannot be expected unless top management sets the example. Only sincere leadership from the top cultivates the sort of worker participation which brings rewarding cost-saving and life-saving results.

#### Good housekeeping on the job—

This is the most profitable, single item in the job safety program. Good housekeeping reduces injuries, waste, and handling of materials.

A brief, daily survey of the job to see if materials, tools and equipment not in use are where they belong, and that all useless trash is disposed of is all that is basically necessary. Hazards can always be readily discovered.

#### Develop a safety program for each job—

Responsibility for safety on each job should be delegated to one or more responsible employees. Particular hazards on each job must be accounted for. Unsafe conditions, accidents, and corrective remedies should be reported, along with the application and effectiveness of general safety methods adopted by the firm.

Each new employee should be impressed with the importance of safety on the job. This and other basic points can be briefly stated in a letter of indoctrination.

Employees should be warned that

the easy jobs which involve constant repetition are the most dangerous for they encourage indifference.

"Tool box talks" by supervisors given before work starts are a good means of keeping up workers' interest in safety.

Competition among key personnel stirs added interest. Periodic meetings and dinners should be held for talks on company matters and for presentation of safety awards. Awards should be worthy of attainment.

A fact sheet listing job accidents and their causes should be posted where all workers can read it.

Posters placed on the job help to  
(Continued on following page)

The A.G.C. national office was represented at the 39th National Safety Congress, held in Chicago from October 8th to 12th, by Harry J. Kirk, manager of the Department of Research and Safety, and J. M. Sprouse, assistant manager of the Heavy Construction and Railroad Contractors' Division. Mr. Kirk is the retiring general chairman of the Construction Section, National Safety Council.

Fifteen separate meetings concerned with accident prevention in the construction industry were covered by Mr. Kirk or Mr. Sprouse.

In addition, two of the principal addresses were delivered by A.G.C. representatives: John A. Volpe, president and treasurer, Volpe Construction Co., Malden, Mass., and George M. Schmeltzer, executive director, Pennsylvania Builders Chapter, A.G.C., Harrisburg, Pa. Mr. Volpe is a past president of the A.G.C. of Massachusetts.

Also attending the meetings was H. B. Alexander, president, H. B. Alexander and Son, Inc., Harrisburg, Pa. Mr. Alexander, national director from District 11, is a past president of the Pennsylvania Builders Chapter and is chairman of the A.G.C. Accident Prevention Committee.



At meeting of Safety Council's Construction Section—John A. Volpe, Malden, Mass., contractor; Chairman H. J. Kirk, Washington, D. C.; and Howard J. Schulte, Corps of Engineers, Kansas City District.



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**JACKSON**



4.



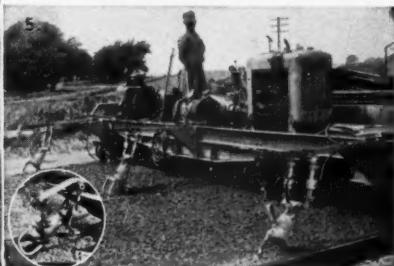
**ELECTRIC, VIBRATORY  
SCREED is  
FAR FASTER-BETTER!**

It strikes off to any crown, undercuts at curb or sideform, works right up to and around manholes and other obstructions. With it center construction joints may be eliminated and full widths (up to 30') poured. Requires only two men on widest slab, due to strong tendency to propel itself. It's the only screed that can be rolled back on 4 rollers for second pass. Contractor has only to secure plank cut to proper length and crown to be set for any job. Powered by Jackson 1.25 KVA Portable Power Plant.

**IDEAL VIBRATORS FOR  
EVERY TYPE OF JOB**

1. Power Plant used with Screed, 1.25 KVA. Others of 2.5 and 5 KVA capacity—all produce both single and 3-phase 110 V., 60 C. AC and have generators requiring no maintenance or adjustment. 2. Powerful, easy to handle electric Vibrator—shafts up to 28". 3. Finest of engine-driven flexible-shaft vibrators. 4. Revolutionary, fast, vibratory Compactor for granular soils and compaction of asphalt in drives, walks, highway widening, patching, etc. 5. Sideform Vibrator, mounts on finisher, saves better part of 2 men's labor. Write for "Pocket Guide" describing the entire line.

**FOR RENT OR SALE AT JACKSON DISTRIBUTORS  
ELECTRIC TAMPER & EQUIPMENT CO.  
LUDINGTON MICHIGAN**



**ACCIDENT PREVENTION**

keep men aware of the need for constant caution.

It is by these simple means that top management can follow through from the chairman of the board to the water boy on the job with an effective accident prevention program. Unless top management takes an obvious interest, the worker cannot be expected to and will not take pride in a unified safety program, Mr. Volpe implied.

Team work on the job will reduce accidents, increase production, and increase profits. Men working under safe conditions produce more than men working under unsafe conditions, he concluded.

**Safe Practices Called  
Best Public Relations**

» SAFETY practices are the best single source of good public relations for the general contractor.

This was the contention of George M. Schmeltzer, Harrisburg, Pa., in his address to the Construction Section of the National Safety Council which met last month in Chicago.

The opposite of this principle is just as true, the executive director of the A.G.C. Pennsylvania Builders Chapter pointed out. A poor safety record is the worst sort of public relations.

The heart of a good public relations program is in a good safety program on the job. First, provide and maintain workers' safety—then publicize the fact and the results, he stated.

Local publicity brings profitable returns. Workers are spurred to join in the firm's accident prevention plan when they see top management's interest in their safety. The greater the workers' interest, the greater is the effectiveness of the safety program.

As sure as a safe job is a neat job, a neat job is a more efficient job, asserted Mr. Schmeltzer. Publicity brings this fact to the prospective owner who is always interested in an economical, efficient job.

**The Public's Safety, Too**

Safety of the public in general must also be provided. This means not only during the job, but also after the job is finished. Mr. Schmeltzer pointed to recent cases involving injuries

## ACCIDENT PREVENTION

caused by defects in the completed job for which general contractors are being held liable.

By cooperating with local newspapers, contractors' accident prevention programs can be given top publicity, Mr. Schmeltzer advised. Periodic meetings where company awards for achievement in safety are given to personnel are good story material. Photographers and reporters should be invited to attend.

They should also be invited to the job site. In this connection, posters and signs located on the job provide picture material along with the neatness of the operation.

In conclusion, Mr. Schmeltzer asserted that efforts to preserve life and maintain safety not only apply Christian principles, but also save money—for "the lack of safety this year will cost almost a billion dollars."

### Successful Safety Program "Responsibility of Boss"

Howard J. Schulte, safety engineer for the Kansas City District, U. S. Corps of Engineers, told the meeting that a successful accident prevention program hinges upon one man—the boss.

In an address entitled "Accident Prevention Made Easy," Mr. Schulte declared: "If the boss is convinced that a badly constructed scaffold indicates badly constructed concrete forms, that bad housekeeping on the job indicates sloppy thinking on the part of the supervisor, then, and not until then, will accident prevention be made easy."

Mr. Schulte added that accident prevention when properly administered can only result in more efficient operation and thus a more economical operation. He pointed out that this saving is in addition to the reduction in human suffering and lost time which result from mishaps.

"When the boss," he added, "is fired with an honest conviction about accident losses, he will guide or force his organization into the same kind of thinking."

Tribute was paid to the pioneers of accident prevention by Mr. Schulte when he stated: "I personally feel that we here, and the nation as a whole, owe a real debt of gratitude to the old-timers who pioneered safety engineering. They contributed substantially all of the basic standards for accident

# "I found out early..."



"I had not been in business very long before I learned what the choice of a top-flight surety company can mean to a contractor.

"I was bidding on an out-of-state job—the biggest job my company had gone after up to then. Yet as soon as I talked to the Aetna Casualty and Surety Company's men, I knew I had come to the right place. Their underwriters understand a contractor's problems right down to the ground—no matter how complex a job may be. And, when we placed that first out-of-state bid, I found out that Aetna's nationally known and respected name in back of us meant a lot in getting favorable recognition.

"Since then, my associates and I have bonded many hundreds of contracts with Aetna—and have always been glad we established that company as our surety early in the game. In emergencies—when a filing deadline is close—Aetna's coast-to-coast facilities and prompt service can make a big difference. And always—Aetna's thorough understanding of the business and the unquestioned respect that the name carries are important assets for the contractors they bond."

Coast to coast . . . you can count on  
The Aetna Casualty and Surety Company  
for prompt, efficient contract bond service.

*"No Job too Big...No Job too Small"*



## AETNA CASUALTY AND SURETY COMPANY

The Aetna Life Affiliated Companies write practically every form of insurance and bonding protection

LIFE AND CASUALTY

Aetna Life Insurance Company  
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FIRE AND MARINE

Automobile Insurance Company  
Standard Fire Insurance Company

Hartford 15, Connecticut

## ACCIDENT PREVENTION

prevention. This contribution was made in spite of the belittlement and ridicule and, in a great many instances, sacrifice in monetary recognition."

### Panel on Physical Exams

A panel discussion on "Job Placement Physical Examinations" was presented, with J. A. DeLuca, Jr., Division Supt., Construction Division, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., as discussion leader. Contractor representatives were: Morris E. DeWitt, Porter-DeWitt Construction Co., A.G.C., Poplar Bluff, Mo.; Allen Bulley, Bulley and Andrews, A.G.C., Chicago, Ill.; and S. K. Eastwood, Erecting Dept., American Bridge Co., Pittsburgh, Pa. Other participants were: Dr. Harold I. Meyer, medical director, Illinois Bell Telephone Co., Chicago; R. E. McFarland, secy.-treas., Construction and General Laborers' Union, Local 341, Anchorage, Alaska; and James D. Hoag, safety engineer, Atomic Energy Commission, Albuquerque, N. M.

Dr. Meyer stated that workmen should be in such physical condition to insure that they will not only not hurt themselves, but that they will not endanger the lives of others on the job.

Speaking for labor, Mr. McFarland said: "Injured workers—unable to work—are a problem of someone—who? Job placement physicals should not be arbitrary on either side, but should be by mutual agreement."

Mr. DeWitt expressed the opinion that pre-employment physicals are an intelligent preliminary to employment, and should be an advantage to all concerned, since it offers a means of placing workers in jobs for which they are suited and which they are best able to perform. "Also," Mr. DeWitt said, "pre-employment physical examinations often reveal minor defects, unknown to the workers themselves, which can be corrected."

Physical examination of construction workers has a direct effect on insurance rates, Mr. Bulley said, and his firm is heartily in favor of it, although problems are created in plac-

ing older workers who must be used in the current shortage of skilled workers.

Mr. Eastwood stated that physically fit men are of particular importance in the business of steel erection. "However," he said, "accident frequency is higher among the physically fit group, since they are usually the ones who take the chances. But workers not physically fit take longer to recover from injuries, and frequently are never able to return to their trade."

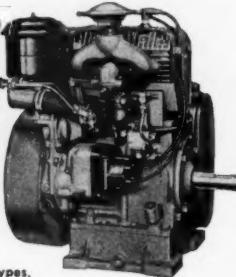
The belief that an education program should be initiated by management to point out to the workmen the advantages of physical examinations was expressed by Mr. Hoag.

### New Section Officers

New officers elected for the 1951-52 year are: General chairman, H. W. Richardson, *Construction Methods and Equipment*, New York City; vice general chairman, George A. Benish, manager of the Milwaukee Chapter, A.G.C.; secretary, Olive E. Potter, (Continued on page 67)

## POWER ADVANTAGE in the 7 to 13 hp. Range...The 2-Cylinder **WISCONSIN** Air-Cooled ENGINES

Here is the POWER ADVANTAGE story of the 2-cylinder Wisconsin Heavy-Duty Air-Cooled Engines, the development of which fills the need for a power linkage between the single-cylinder and four-cylinder types.



1. Dependable air-cooling under all climatic and weather conditions.
2. Self-cleaning tapered roller bearings at both ends of the crankshaft to withstand either side-pull or end-thrust without danger to bearings.
3. Rotary type high tension OUTSIDE Magneto with Impulse Coupling operates as an entirely independent unit that can be serviced or replaced in a few minutes.
4. Maximum torque at usable speeds for equipment that really has to go to work.

#### CONDENSED SPECIFICATIONS

	MODELS	TE	TF
Bore	- - - - -	inches	3
Stroke	- - - - -	inches	3 1/4
Piston Disp. cubic inches	- - - - -	-	45.9
Horsepower			53.9
1400 rpm	- - - - -	7.2	8.6
2000 rpm	- - - - -	10	12
2600 rpm	- - - - -	11.2	13.3
Net weight in lbs. Standard engine, side-mount tank	- - - - -	220	220

Our engineering department will gladly cooperate with you in adapting Wisconsin Engines to your requirements. Write for detailed data and name of the nearest Wisconsin distributor.



## WISCONSIN MOTOR CORPORATION

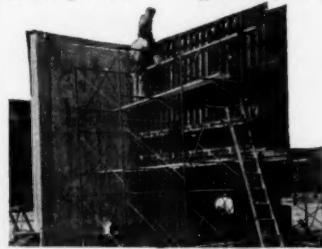
World's Largest Builders of Heavy-Duty Air-Cooled Engines

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## Atlas SPEED SYSTEM of All-Steel Form Construction

Not just a set of forms but a complete system including layouts, cost analysis, pouring schedules, Atlas SPEED forms, and specialists to train your men. You SAVE and SAVE—Forms go up fast and are reused on all types of jobs without adjustments or repairs. Many report 500 and more uses. Let's talk it over. Write Dept. CR for a representative to call.

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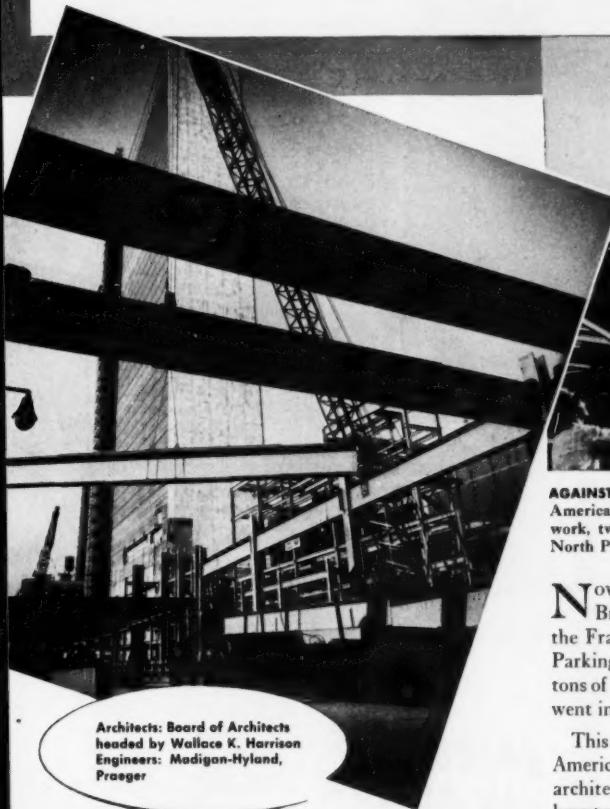


# 3 new structures

## for the United Nations

*...fabricated and erected by the*

**AMERICAN BRIDGE COMPANY**



Architects: Board of Architects  
headed by Wallace K. Harrison  
Engineers: Madigan-Hyland,  
Praeger

**AMERICAN BRIDGE BEGINS** erection of the steel framework for the cover of the Franklin D. Roosevelt Drive at the UN Headquarters. Eventually the entire drive from 42nd St. to 48th St. at East River will be covered. In the right foreground steel framework for the Meeting Halls Building can be seen. When completed, this building will extend, by cantilever construction, over the drive to the edge of the river.

**AVAILABLE NOW!** For showing in churches, schools, clubs, and industries, the new sound and color motion picture—**BUILDING FOR THE NATIONS**—a candid, factual photographic record of the highlights of the fabrication and erection of the United Nations' Secretariat Building in New York City.



**AMERICAN BRIDGE**  
UNITED STATES STEEL



**AGAINST A BACKGROUND** of the completed UN Secretariat Building, for which American Bridge Company fabricated and erected 13,800 tons of structural steel-work, two bridgemen direct the unloading of steel columns and beams for the North Parking Space at the UN site.

Now that the UN Secretariat Building is completed, American Bridge is erecting the Meeting Halls Building and cover for the Franklin D. Roosevelt Drive, General Assembly Hall and North Parking Space. When finished these structures will contain 18,600 tons of fabricated steel framework, in addition to the 13,800 tons which went into the Secretariat Building.

This is typical of how the time-tested and proved experience of the American Bridge Company has been linked to the latest in modern architectural and engineering design to create structures of unusual beauty and enduring strength. Hundreds of steel-framed buildings all over the country are proof that for sturdy, economical structural work you can't beat rigid steel construction—and for varied experience . . . unexcelled facilities . . . trained personnel, you can't go wrong when you depend on American Bridge.

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# UNIVERSAL Spirolocs

## HEAVY DUTY TIES FASTEST—SAFEST—LOWEST COST



### Greater Tie Strength

For less money with Spirolocs

5,000# Ties with  $\frac{1}{4}$ -Tie Rods

9,000# Ties with  $\frac{1}{2}$ -Tie Rods

14,000# Ties with  $\frac{3}{8}$ -Tie Rods

20,000# Ties with  $\frac{3}{4}$ -Tie Rods

### SPIROLOC CONE NUT ASSEMBLY



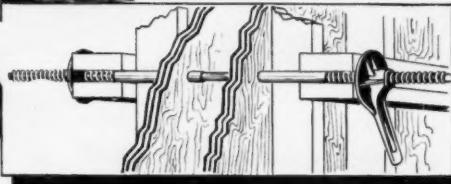
The only fast acting form Tie with an absolutely positive spreader...assures smooth surfaced, watertight walls.

Write for complete details on SPIROLOCS and ask for catalog describing Universal Form Tying Accessories.

UNIVERSAL Spirolocs—  
heavy duty Form ties...Permanent, reusable equipment...fast acting Acme threads...washers and stud rods last indefinitely; only inexpensive threaded tie rods expended.

Spirolocs provide fast erection...easy stripping...available in various time-saving combinations to fit the exact needs of your job.

### RENTED... SOLD



Spirolocs are Furnished  
with either Handle or  
Nut Type Washers

THE HANDLE WASHER  
SLIP IT ON



THE NUT WASHER  
SPIN IT ON

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*Concrete Form Specialists Since 1912*

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Service Wherever You Build...Coast-to-Coast

## ACCIDENT PREVENTION

# a JAEGER never races to prime

(Continued from page 64)

*Contractors and Engineers Monthly*, New York City; chairman, Program Committee, Jerome J. Williams, Morrison-Knudsen Co., Inc., A.G.C., Boise, Idaho; chairman, Membership Committee, Robert L. Moore, Lumbermen's Mutual Casualty Co., Chicago; chairman, Engineering Committee, F. H. Mackie, Manager, Construction Division, E. I. du Pont de Nemours and Co., Inc., Wilmington, Del.; chairman, Publicity Committee, George M. Schmeltzer, Executive Director, Pennsylvania Builders' Chapter, A.G.C., Harrisburg, Pa. Howard Warzyn is staff engineer for the section.

A new gavel, replacing the one used since the founding of the Construction Section which had become filled with the names of the general chairmen, was presented to the section by the Construction Division of the du Pont Co. The presentation was made to Mr. Warzyn by Mr. DeLuca, general chairman in 1949-50.

### Carpenter Injuries Analyzed

An analysis of 4,599 lost-time work injuries to carpenters is offered by the California Division of Labor Statistics and Research, Department of Industrial Relations, for use in accident prevention programs.

Carried out in cooperation with the U. S. Bureau of Labor Statistics, the study shows 4,032 injuries were sustained by journeymen, 296 by apprentices, 77 by helpers, and 19 $\frac{1}{2}$  by foremen or superintendents.

Nearly 25 per cent of all injuries occurred in lifting, carrying or placing lumber, forms, building materials, or other objects.

Over 16 per cent were in connection with hand tools, with hammer and hatchet accidents alone accounting for nearly 7 per cent of all injuries.

Accidents while operating powered tools were responsible for 13 per cent. Another 9 per cent occurred while carpenters were walking on, stepping to or from, or climbing on various working surfaces.

Being struck by or striking against objects accounted for over 2,200 of the 4,599 injuries reported. Falls were responsible for 1,016, and over-exertion for 779 injuries.

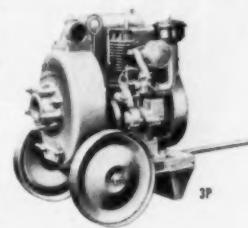
Strains and sprains were suffered in 32 per cent of the accidents, followed by cuts, lacerations and punctures at 29 per cent, and bruises and contusions at 18 per cent.



\*Dewatering 1500' of 8' x 14' deep sewer trench at a river crossing, this 4" Jaeger pump handled 40,000 gph at an average speed of only 1200 rpm (10% to 15% lower speed than other pumps), and reprimed quickly, as needed, at 1400 rpm (compared with 1800 to 2000 rpm required to prime ordinary pumps).

#### Pump longer because they pull stronger at easy speeds

Jaeger "Sure Prime" Pumps are built oversize with larger shells and impellers, and generously powered. They hold more priming water and are subject to less abrasive wear. Exclusive double priming action is fast, dependable, without harmful racing of engine. No vapor lock even when pulling high vacuum on long intake lines—sustained efficiency on non-stop pumping, and thousands of extra hours of service from both pumps and engines.



Other sizes 1 $\frac{1}{2}$ " to 10"

See your Jaeger distributor or send for Catalog P-10

## THE JAEGER MACHINE COMPANY

528 Dublin Ave., Columbus 16, Ohio

COMPRESSORS • MIXERS • HOISTS • TOWERS • PAVING MACHINERY

**Indirect Cost of Accidents**

**The Accident:**—A crane operator slipped on an oil slick on the floor of his cab, struck his knee and was off the job for three days.

**Direct Cost:**—\$12.50, medical aid.

**Proximate Results:**—When the accident occurred, the operator was placing a 60 ft. by 9 ft. girder suspended between his and another crane. When the operator slipped he dropped his end of the load. As the girder fell, it dislodged another girder and caused the collapse of the other crane which in turn pulled down power and telephone lines.

The power lines supplied a textile mill which had to shut down for 15 hours thus giving rise to a claim for \$7,500, for which the contractor was not insured.

**Indirect Cost:**—\$13,000 for uninsured costs.

**Prevention:**—Demand good housekeeping—it increases net profits.

**A. C. of I. - A.G.C. Group Meets in Chicago**

REDUCING COSTS by increasing safety efforts was the core of mutual aims of general contractors and insurance company representatives who met in Chicago last month.

The Oct. 11 meeting of the Joint Cooperative Committee of the Associations of Casualty Insurers and the A.G.C. brought several points into focus.

Believing that a great many contractors do not know that insurance companies provide information on accident prevention, the committee agreed that the insurers should so inform their clients, and at the same time impress upon them the amount which can be saved if safety programs on the job were improved.

**Indirect Costs**

Examples of the indirect costs of accidents, it was announced, have been developed for publication in *THE CONSTRUCTOR*. (The second of this series appears on this page.)

Other topics discussed included the development of the new ten-point accident prevention program of the A.G.C. with emphasis on its progress among the association's chapters. H. B. Alexander, A.G.C., co-chairman, Harrisburg, stated that the minimum safety program developed by the committee especially for contractors was being well received.

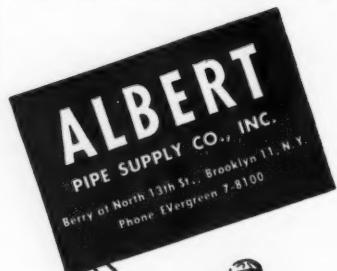
**5-Point Program**

Briefly, the five points of this program are: (1) safety leadership and support by the general contractor himself, (2) delegation of responsibility for the firm's safety program, (3) knowledge of safe and unsafe practices, (4) investigation of the cause of each accident, and (5) prevention of the accident's happening again.

Activities of the National Safety Council were discussed. Also, it was reported that work is going forward to include safety specifications in general contracts.

# SAVINGS FLOW FROM *SPEED-LAY* PIPE SYSTEM

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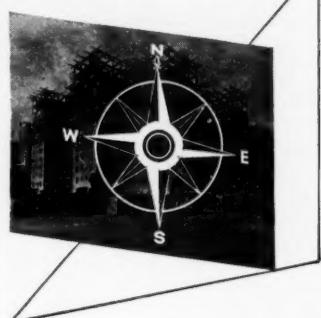
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CITY \_\_\_\_\_ STATE \_\_\_\_\_

PROMPT, NATION-WIDE  
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Agents and Brokers Everywhere

After removing timber deck and stringers, forms are set for the risers.



Placing concrete deck slabs.



## Bridges rebuilt in a matter of hours with **LEHIGH EARLY STRENGTH CEMENT**



Reinforcing bars projecting from slabs are joined with cable clamps. Forms are drawn up and wired under the open strips ready for pouring.



Traffic moving over completed half of a 5-span bridge.

Along the Tamiami Trail, Florida engineers are setting new records in rebuilding old timber bridges with fireproof and rotproof concrete. They are replacing worn-out decks in as little as 84 hours, at costs less than for timber construction.

With their unique design and construction methods . . . and Lehigh Early Strength Cement . . . a 2-span, 30-foot bridge, for instance, is rebuilt in 4 working days; a 5-span bridge in 9 days.

Deck slabs are precast in the district maintenance yard. Forms are stripped the following day. Slabs are immediately moved to storage, or in emergencies, to bridge site. And here's the schedule for replacing a typical 2-span bridge.

**FIRST DAY.** The crew barricades one half of roadway, rips off one half of deck and stringers, sets forms and pours concrete risers on existing piers. Other half of roadway is open to traffic.

**SECOND DAY.** The crew places slabs ten inches apart on piers. Forms are drawn up and concrete poured in the open strips by 2 P.M. and approaches completed.

**THIRD DAY.** The finished half of bridge is ready for traffic. Construction of other half follows same method. By end of fourth day, the entire bridge is completed.

Engineer of Bridges:  
**W. E. DEAN**

District Engineer:  
**J. M. WATSON**

Ass't District Engineer:  
**WINSTON CARLTON**

Maintenance Engineer:  
**KIRBY S. STORTER**

Superintendent—Maintenance Forces:  
**W. B. MCKAY**

**Lehigh**  
CEMENTS

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LEHIGH PORTLAND CEMENT • LEHIGH EARLY STRENGTH CEMENT • LEHIGH AIR-ENTRAINING CEMENT • LEHIGH MORTAR CEMENT

# Chrysler Building East

This new office building, in the heart of New York's Grand Central District, is known as the Chrysler Building East. It is a 32-story companion structure to the 77-story Chrysler Building, and its lower six floors abut the northeast wing of that famous structure. Public corridors connect the two buildings at the basement, subway concourse, and third-floor levels.

The Chrysler Building East occupies a 30,000 sq ft plot. It has entrances on East Forty-third St., Third Avenue, and East Forty-second St., and can be reached from Grand Central Terminal and the city's subway system by means of underground passages. It is a completely self-contained unit, with its own utilities, and is serviced by 20 high-speed elevators. It is air-conditioned, and has an elaborate series of under-floor ducts to carry electric wiring for telephone, telegraph and business machines.

The Chrysler Building East is designed to afford maximum light for both buildings, and its tower is therefore located at the far end of the block from the Chrysler Building. It has approximately 420,000 sq ft of rent-



able area, the second to tenth floors providing from 22,000 to 26,000 sq ft each, and the tower floors each providing from 6800 to 7600 sq ft. The exterior of the new building, finished in white brick, covers a framework containing 6960 tons of steel which was fabricated and erected by Bethlehem.

Chrysler Building East as it looked with facing at 25th story. Owner: W. P. Chrysler Building Corp., New York; Architects: Reinhard, Hofmeister & Walquist, New York; Consulting Engineers: Edwards & Hjorth, New York, Guy B. Panero, New York; General Contractor: Turner Construction Co., New York. Steelwork by Bethlehem.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation*



## FABRICATED STEEL CONSTRUCTION

» THE PROGRAM and policies of The Associated General Contractors of America were outlined to members in Western and Southeastern states in September and October by President Glen W. Maxon, Vice President Arthur S. Horner, and Managing Director H. E. Foreman.

They used every opportunity to assure the public that the contracting industry has the capacity to execute all defense and essential civilian construction promptly and efficiently so long as the federal government does not adopt policies which hamper the industry's productive capacity unreasonably.

In their travels of more than 12,000 miles, they met with representatives of approximately one-sixth of the association's chapters and branches. This afforded an opportunity for the interchange of information and provided the national leaders with the opportunity of becoming personally familiar with conditions in various parts of the country. On their Western trip they were accompanied by C. I. Mehl of the national staff.

Through press conferences, interviews, and addresses which were reported, the national officers and chapter officials were able to bring the industry's contribution to the national defense and civilian economy to public attention.

In Seattle, September 21, a meeting was held by the Seattle, Mountain, Pacific and Tacoma Chapters, which was attended also by representatives from the Eastern Washington Builders Chapter and members throughout the state. Howard Lease, president of the Seattle Chapter, presided, and arrangements were made by James W. Cawdrey, national director from Washington.

In Portland, September 24, members from Oregon attended a meeting in Portland sponsored by both of the A.G.C. chapters there. Henry Kueckenberg, president of the Portland Chapter, presided, and the arrangements were made by A. H. Harding, chapter manager. Henry M. Mason, president of the Portland Chapter, Building Division, arranged a conference with the president of the American Institute of Architects, Mr. Glenn Stanton.

In San Francisco, two days later, A.G.C. members from Northern California and Nevada attended a meeting sponsored by the Northern and Central California Chapters. A. E. Holt, president of the Northern California

## A. G. C. Officials Visit Many Chapters



At Seattle: National directors A. S. MacDonald, Tacoma and J. W. Cawdrey, Seattle; D. L. Cooney, Seattle, vice president, Mountain Pacific Chapter; National Vice President A. S. Horner, Denver; National President G. W. Maxon, Dayton, Ohio; Seattle Chapter President Howard Lease; Managing Director H. E. Foreman, Washington; C. I. Mehl, Washington A.G.C. staff member; Tacoma Chapter President Lige Dickson; Wayne Sutton, Seattle, national director; and A. L. Atherton, Seattle, Advisory Board member.



At San Francisco: F. F. Burrows, vice president, Central California Chapter; A.G.C. Vice President Horner; A. E. Holt, president, Northern California Chapter; Adolph Teichert, Jr., Sacramento, past president of the national association; Bert O. Summers, president, Central California Chapter; President Maxon and Managing Director Foreman.



At Los Angeles: Seated, Messrs. Horner, Foreman and Maxon. Standing, Mr. Mehl; National Director J. A. Thompson; Southern California Chapter President Ben P. Griffith, and Chapter Manager W. D. Shaw.

Chapter, presided. Arrangements were made by Winfield H. Arata and Frank G. Corker, managers of the two chapters.

In Los Angeles, September 28, the Southern California Chapter spon-

sored a meeting for members in Southern California, also attended by a delegation from the San Diego Chapter. Ben P. Griffith, chapter president, presided, and arrangements were made by Manager W. D. Shaw.

The national association representatives made a brief stop in Albuquerque on October 1 to meet with members in New Mexico at a luncheon sponsored by both chapters in the state. Marshall J. Wylie, president of the Associated Contractors of New Mexico, presided, and arrangements were made by C. O. Faulk, manager of that chapter, and Alva J. Coats, manager of the New Mexico Building Branch.

The officers also had the opportunity to visit with Mrs. Gayle G. Armstrong, and family, whose husband died a year ago after nomination for A.G.C. vice president.

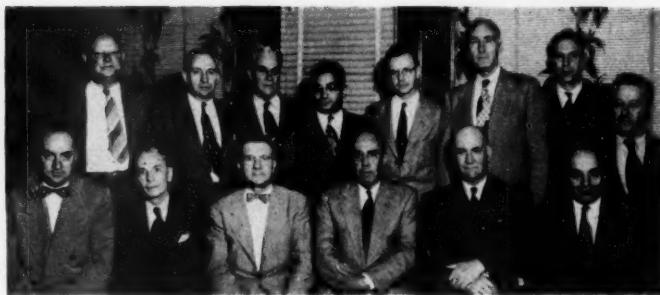
The Western trip concluded with a meeting on October 2 sponsored by the two Colorado Chapters in Denver, the home of Vice President Horner. James R. Howell, president of the Colorado Building Chapter, presided, and arrangements were made by Manager William S. Hibberd. A luncheon in Colorado Springs, attended by members of both chapters, was arranged by President Walter Steinwald and Managing Director Earle W. Devalon of the Colorado Contractors Association.

The national officers addressed the 31st annual convention of the Carolinas Branch at Pinehurst, N. C., on October 15. The meeting was attended by A.G.C. members from adjoining states. The Carolinas Branch is the home chapter of C. P. Street, who has been nominated by the Boards for A.G.C. Vice President in 1952.

Mr. Maxon and Mr. Foreman proceeded to Atlanta for a meeting with the Georgia Branch on October 17, at which President Merrill W. Newbanks presided. It was arranged by National Director P. D. Christian, Jr., and Executive Secretary Hugh W. Roberts.

In Tampa, Florida, on October 18, the Florida West Coast Chapter sponsored a meeting attended by A.G.C. members in the area. Chapter President Jack O'Brien presided, with arrangements made by Secretary Judson Edwards.

The trip concluded with a meeting in Miami sponsored by the South Florida Chapter. Frank J. Rooney, president, presided, with arrangements made by Manager Paul H. Hinds.



**Connecticut Chapter Holds Annual Meeting**

The 47 members of the Connecticut Chapter, A.G.C., who attended the fifth annual meeting of the chapter held in New Haven, Oct. 8, heard comments on state and national construction problems.

The controlled materials plan and other construction controls were reviewed by C. S. Embrey, national A.G.C. administrative assistant, Washington. Mr. Embrey also talked on the national scope and work of the association.

State construction matters were surveyed by Ralph G. Macy, public works commissioner for Connecticut.

C. F. Grisham, chapter executive vice president, reported that during the year membership had increased from 46 to 49. He asked that members encourage more contractors to join the chapter, explaining that the work of the A.G.C. was for the benefit of the entire construction industry and that there was a duty upon every businessman to support efforts to better his particular industry.

Mr. Grisham pointed to the great strides which were being made in the field of accident prevention by the association, and to the fact that members would be in a chaotic state were it not for the association's distribution of control orders as they were issued.

New officers elected during the dinner meeting are: president, A. Scott Paterson, Paterson Construction Co., Inc., New Haven; vice president, A. J. M. Giardini, The Associated Construction Co., Hartford; secretary, William Noble, Jr., W. J. Megin, Inc., Naugatuck; and treasurer, George R. Johnson, Richard Johnson Co., Hartford. C. F. Grisham continues as executive vice president.

Pictured above are, left to right: (seated) A. J. M. Giardini, Hartford; C. S. Embrey, Washington; Retiring President E. E. Bray, Bridgeport; A.

Scott Paterson, New Haven; Ralph G. Macy, Connecticut Public Works Commissioner; G. Vincent Maconi, New Haven; (standing) W. A. Hubbell, Bridgeport; William Noble, Jr., Naugatuck; C. F. Grisham, New Haven; A. D. Horn, Hartford; C. W. Moore, Torrington; E. F. Kelley, New Haven; Philip H. Simonds, New Haven; Philip Epifano, Bridgeport.

#### Obituary



**Charles H. Newell**

**Charles H. Newell**, 64, secretary-treasurer of the Texas Highway Branch, A.G.C., for 16 years, died Oct. 3 while in Denver.

While on a vacation trip in Colorado, Mr. Newell became ill and was operated on in a Denver hospital for an ulcerated stomach. A second operation became necessary to save his life but proved fatal.

The Oklahoma University graduate was editor of the *Denver Express* from 1913 to 1916. After leaving the

(Continued on page 75)



Just look at this baby reach! That means easier, faster work when you're digging basements, sewers or trenching. It's only one of many advantages that have popularized the Link-Belt Speeder LS-51.

**AT YOUR FINGER TIPS...**

## **up to 25% increased output**

**WITH SMOOTHER, EFFORTLESS *Speed-o-Matic* CONTROLS**

**LINK-BELT  
SPEEDER**

Fingers instead of muscles do the control work on the Link-Belt Speeder LS-51. That's why operation of this Shovel-Crane is faster, surer, and easier. You get time-saving precision, too . . . "pin-point" placement of bucket, shovel or hoe, without drag, lag, jerk or jump. Control is perfect . . . you "feel" the load every inch of the way.

Operators praise the ease Speed-o-Matic power-hydraulic controls provide. Say they keep fresher, more alert even during long overtime. This pays off in greater output . . . up to 25% and more, and the kind of profits you like to see.

Introduced 15 years ago, Speed-o-Matic power-hy-

draulic controls have proved their superiority under toughest field conditions. They are typical of the many advanced features, such as the optional independent swing and travel, which make the LS-51 the standout performer of the ½-yard field. Other Link-Belt Speeder models are available in shovel capacities up to 3 yards; cranes up to 60 tons, in crawler, truck and wheel-mounted types. Each model is fully and quickly convertible to all Shovel-Crane attachments. Prompt service is provided by a nation-wide network of factory-trained distributor servicemen.

Depend on Link-Belt Speeders for more work, more kinds of work, more of the time. See our distributor, or write

**LINK-BELT SPEEDER**  
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Builders of the most complete line  
of shovels, cranes and draglines  
**CEDAR RAPIDS, IOWA**

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Order No.	Amount	Cost	11. ....	27. ....	40. ....
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**Make Checks payable to CONSTRUCTION FOUNDATION, A.G.C., Munsey Building, Washington 4, D. C.**

Gentlemen: Enclosed find check for \$\_\_\_\_\_ for which please send materials as ordered by number herewith.

Name \_\_\_\_\_ Address \_\_\_\_\_

*City.....* *Zone.....* *State.....*

Nov. 1951

(Continued from page 72)

Denver paper which later merged with *The Rocky Mountain News*, he worked for Scripps-Howard enterprises in Cleveland and later for newspapers in Dallas, Texarkana and Austin.

In 1935, Mr. Newell became secretary-treasurer of the Texas Highway Branch with a membership of 58. Under his management this number increased to 114.

Funeral services and burial were in Austin, his home.

He is survived by his wife, Grace, a son, Vance, both of Austin, and his brother, Rev. J. Pierce Newell, La Crosse, Wis.

**J. L. O'Rourke**, 52, president of J. L. O'Rourke & Sons, Dallas, died September 28 at his home.

A member of the Dallas Chapter, A.G.C., he had been active in the construction business for 30 years. He was also a member of the Knights of Columbus and the Holy Name Society of St. Edwards Parish.

Survivors are his widow, Margaret, and a son, J. L. O'Rourke, Jr., both of Dallas; and four brothers, all Texans.

## **A.G.C. Branch and Chapter Meetings**

A monthly cumulative list of annual meetings scheduled by chapters and branches of The Associated General Contractors of America, as reported to **THE CONSTRUCTOR**:

- Nov. 15, 1951. CHICAGO BUILDERS CHAPTER. Chicago. Builders Club.
- Nov. 30-Dec. 1, 1951. NORTHERN CALIFORNIA CHAPTER. San Francisco. Palace Hotel.
- Nov. 30-Dec. 1, 1951. A.G.C. OF NORTH DAKOTA. Grand Forks. Dacotah Hotel.
- Dec. 2-3, 1951. MUNICIPAL CONTRACTORS ASSOC. Dallas. Adolphus Hotel.
- Dec. 3, 1951. FLORIDA WEST COAST CHAPTER. Tampa. Floridan Hotel.
- Dec. 3-4, 1951. OHIO HIGHWAY CHAPTER. Columbus. Neil House.
- Dec. 3-4-5, 1951. INDIANA HIGHWAY CONTRACTORS, INC. French Lick. French Lick Springs Hotel.
- Dec. 4, 1951. AUSTIN CHAPTER. Austin. A.G.C. Plan Room.
- Dec. 4, 1951. COLORADO BUILDING CHAPTER. Denver. Albany Hotel.
- Dec. 4, 1951. DALLAS CHAPTER. Dallas. Dallas Athletic Club.

## **ARE YOU GETTING SAVINGS LIKE THESE?**

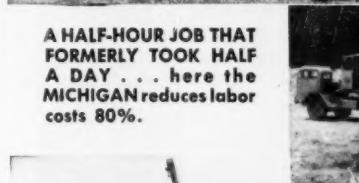
**H**ere's a contractor who is...with a **MICHIGAN** Truck Excavator-Crane.

On the Elk River Bridge Project, Garrett & Farris Company of Knoxville, Tennessee, uses it's **MICHIGAN** to pour concrete...strip forms...charge the batcher...excavate for pier foundations...load materials at a rail siding four miles distant and unload back at the job...sort pilings and supply the pile driver...position the pile puller when needed...all in a day's routine.

And look at some of the savings:



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**CHAPTERS • BRANCHES**



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- (3) The all-metal construction of Kinnear Doors gives you extra protection against fire, intruders, wind and storm damage, and other hazards.

By opening straight upward with spring-counterbalanced action, they provide smooth, easy operation under all conditions. They can be equipped for manual, mechanical, or electrical control. Motor operated doors can be equipped with any number of remote control switches, for maximum convenience. Kinnear Doors are built in any size, for easy installation in old or new buildings. Write for complete information.

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IN DOORWAYS**

**KINNEAR**  
**ROLLING DOORS**



- Dec. 5, 1951. **WACO CHAPTER.** Waco. Elite Cafe on "The Circle."
- Dec. 6-7, 1951. **WISCONSIN CHAPTER.** Milwaukee. Plankinton Hotel.
- Dec. 6-7-8, 1951. **HIGHWAY CONSTRUCTION INDUSTRY OF SOUTH DAKOTA, INC.** Sioux Falls. Cata-tract Hotel.
- Dec. 7-8, 1951. **NEW YORK STATE CHAPTER, INC.** New York City. Hotel Roosevelt.
- Dec. 8, 1951. **A.G.C. OF NEW MEXICO, BUILDING BRANCH.** Albu-querque. Hilton Hotel.
- Dec. 10, 1951. **SPOKANE CHAPTER.** Spokane. Hotel Spokane.
- Dec. 11, 1951. **SEATTLE CHAPTER.** Seattle. Construction Center.
- Dec. 11, 1951. **SAN ANTONIO CHAPTER.** San Antonio. 227 Transit Tower.
- Dec. 11-12, 1951. **MASTER BUILDERS OF IOWA.** Des Moines. Hotel Savery.
- Dec. 13, 1951. **MEMPHIS CHAPTER.** Memphis. King Cotton Hotel.
- Dec. 14, 1951. **SOUTH TEXAS CHAPTER.** Corpus Christi. Plaza Hotel.
- Dec. 15, 1951. **NEVADA CHAPTER.** Reno. Chapter Office.
- Dec. 19, 1951. **A.G.C. OF MASSACHUSETTS.** Boston. Hotel Touraine.
- Jan. 1952. **SOUTH FLORIDA CHAPTER.** Miami. Probably at Columbus Hotel.
- Jan. 8, 1952. **MASTER BUILDERS ASSOC., INC.** District of Columbia. Mayflower Hotel.
- Jan. 8, 1952. **PHILADELPHIA CHAPTER.** Philadelphia. Barclay Hotel.
- Jan. 8-9, 1952. **PIPE LINE CONTRACTORS' ASSOC.** Houston. Shamrock Hotel.
- Jan. 8-9-10, 1952. **A.G.C. OF IOWA.** Des Moines. Hotel Savery.
- Jan. 10, 1952. **SAN DIEGO CHAPTER.** San Diego. El Cortez Hotel.
- Jan. 10-11, 1952. **KANSAS CONTRACTORS ASSOC.** Kansas City. Presi-dent Hotel.
- Jan. 10-11-12, 1952. **A.G.C. OF MINNESOTA.** St. Paul. St. Paul Hotel.
- Jan. 11-12, 1952. **MONTANA CONTRACTORS' ASSOC., INC.** Missoula. Florence Hotel.
- Jan. 11-12, 1952. **MONTANA BUILDING CHAPTER.** Missoula. Florence Hotel.
- Jan. 11-12, 1952. **INTERMOUNTAIN BRANCH.** Salt Lake City. Hotel Utah.
- Jan. 12, 1952. **OKLAHOMA BUILDERS CHAPTER.** Oklahoma. Skirvin Hotel.

(Continued on page 78)

## DURAPLASTIC Aids Proper Concrete Placement in World's Biggest Bus Terminal

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\*"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.

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## CHAPTERS • BRANCHES

(Continued from page 76)

- Jan. 13-14, 1952. NEBRASKA BUILDING CHAPTER. Lincoln. Hotel Cornhusker.
- Jan. 14, 1952. PORTLAND CHAPTER. Portland. Chapter quarters.
- Jan. 16, 1952. DETROIT CHAPTER. Detroit. Detroit Athletic Club.
- Jan. 16, 1952. LOUISVILLE CHAPTER. Louisville. (Not selected.)
- Jan. 18, 1952. MILWAUKEE CHAPTER. Milwaukee. Schroeder Hotel.
- Jan. 19, 1952. A.G.C. OF WEST VIRGINIA. Charleston. Daniel Boone Hotel.
- Jan. 22-23, 1952. A.G.C. OF MISSOURI. St. Louis. Statler Hotel.
- Jan. 24, 1952. IDAHO BRANCH. Boise. Hotel Boise.
- Jan. 25, 1952. CENTRAL CALIFORNIA CHAPTER. San Francisco. St. Francis Hotel.
- Jan. 25-26, 1952. COLORADO CONSTRUCTORS ASSOC., INC. Denver. Shirley-Savoy Hotel.
- Feb. 1, 1952. CONSTRUCTORS ASSOC. OF WESTERN PENNA. Pittsburgh. Hotel William Penn.
- Feb. 28, 1952. RHODE ISLAND CHAPTER. Providence. (Not selected.)
- Mar. 1952. CINCINNATI CHAPTER. Cincinnati. Cincinnati Club.
- Mar. 12, 1952. HOUSTON CHAPTER. Houston. Ben Milam Hotel.
- Apr. 2-3, 1952. MICHIGAN ROAD BUILDERS ASSOC. Detroit. Hotel Statler.

### Tentative Dates

- Nov. 1951. MASTER BUILDERS ASSOC. OF ALLEGHENY COUNTY. Pittsburgh. (Not selected.)
- Dec. 4, 1951. EL PASO CHAPTER. El Paso. (Not selected.)
- Jan. 7, 1952. ASSOC. OF OKLAHOMA GENERAL CONTRACTORS. Oklahoma City. Huckins Hotel.
- Jan. 8, 1952. INDIANA GENERAL CONTRACTORS' ASSOC. Indianapolis. (Not selected.)
- Jan. 10, 1952. BALTIMORE BUILDERS CHAPTER. Baltimore. Park Plaza Hotel.
- Jan. 25, 1952. SOUTHERN CALIFORNIA CHAPTER. Los Angeles. Biltmore Hotel.
- Feb. 1952. CLEVELAND CHAPTER. Cleveland. (Not selected.)
- Feb. 1952. KENTUCKY HIGHWAY DIVISION. Louisville. Kentucky Hotel.
- Mar. 1952. METROPOLITAN BUILDERS ASSOC. OF NEW YORK CITY. New York City. University Club.
- June 17, 1952. TEXAS HIGHWAY BRANCH. Austin. Austin Hotel.



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## 10 INCH PUMP FOR THE BIG JOBS

At a total head of 15 feet this pump will deliver 4150 gallons of water per minute - more than 15 tons of water a minute. This means a torrent of 249,000 gallons per hour.

This great 10 inch self-priming centrifugal is **The Pump for the Big Jobs** -- in construction, open ditch irrigation, water supply and industrial applications.

Wherever there is a large volume of water to handle call on the Gorman-Rupp "Big Boy" the 240-M, 10 inch pump.

### GASOLINE ENGINE DRIVEN

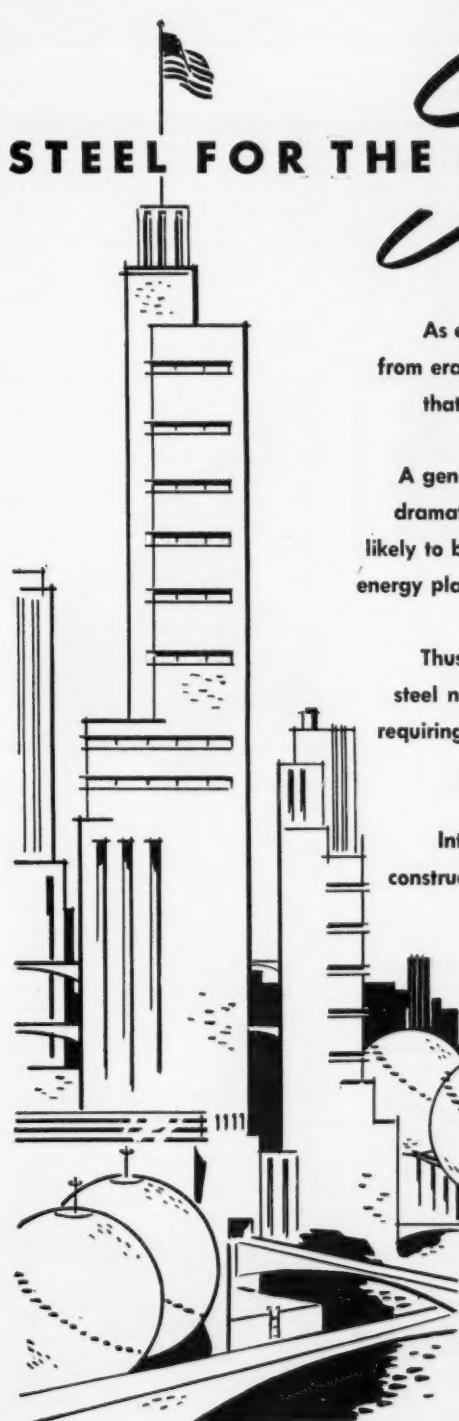
Model 31001, 240M, 10 in. 65 H.P. Length 136" (incl. tongue), width 50", height 65". Net wgt. 2870 lbs. Applicable engines include Hercules Model JXD, and Chrysler Model IND-12.

### DIESEL ENGINE DRIVEN

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As everything else in America, our skylines change . . . from era to era, from decade to decade. They are changes that indicate new trends in our thinking, in the direction of our national energies.

A generation ago the new skyscraper provided the most dramatic change in the American Skyline. Today it is more likely to be a soaring, high-pressure storage tank, a nuclear energy plant, an aircraft hangar, an imaginatively conceived factory or school.

Thus, a change has come about in the nation's structural steel needs, with new and different types of construction requiring new and different shapes and properties of steel. It is a change that calls for the type of flexibility, technical resourcefulness and specialized skill that International Steel brings to the fabrication of steel for construction . . . a change that calls for International Steel's proved ability to produce the new and different with economy and dispatch.

Write us about your steel fabricating problems — give us the opportunity to help.

## INTERNATIONAL Steel Co.

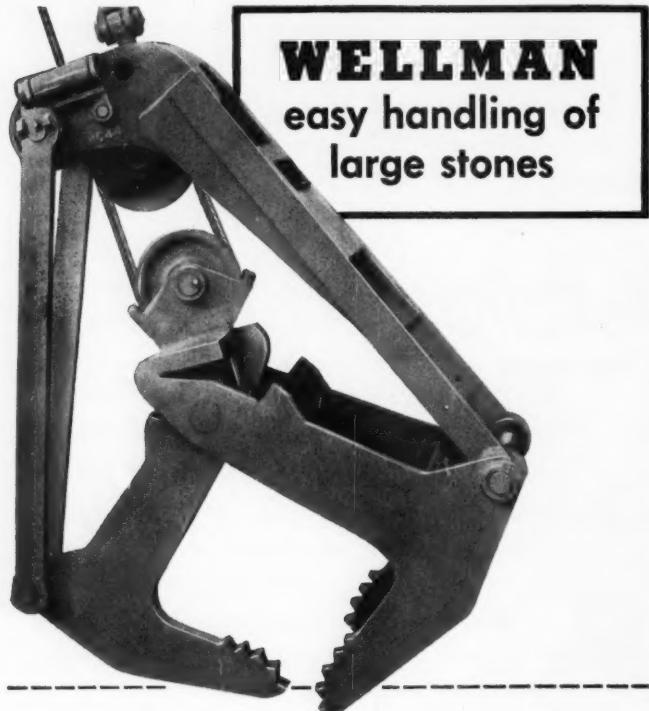


1858 EDGAR STREET  
EVANSVILLE, INDIANA

**Steam Cleaning Unit**—*Kelite Products, Inc., 1250 N. Main St., Los Angeles 12.* "Power Master Unit" has 2 high-pressure steam guns, each delivering 150 g.p.h., and high-pressure water gun supplying hot or cold water at pressure of 500 lbs. per sq. in. Power blast feature of unit delivers 1,000 g.p.h. of water for blasting away accumulations of mud, muck, heavy grease, etc.

**Derrick**—*Clyde Iron Works, Inc., Duluth 1, Minn.* Model W-3 self-contained, full-revolving steel derrick is available with gasoline or electric power and can be swung by hand or power. It has tail swing of 5'6" and requires no stiff-legs or guy lines. Rotating structure which supports boom and boom-supporting members also supports hoisting machinery, providing counterweight for stability

when swinging loads. Complete rotating structure is centered on cast steel turntable by means of bronze bushed center pin and is supported by 4 double tapered, anti-friction bearing rollers. Boom lengths of 20', 30' or 40' are available with load capacities from 2,000 lbs. at 40' radius to 10,000 lbs. at 10' radius. Machine is recommended for loading or unloading work, for handling materials and for setting steel on construction jobs.



- Those big stones won't slip from the Wellman Stone Grab. Four-part closing cable reeving develops tremendous closing force on stones. Model shown has 5-ton capacity, 4½ foot jaw spread. Other capacities available.

*Want Facts?* Send for free descriptive bulletins.

**THE WELLMAN ENGINEERING COMPANY**

7000 CENTRAL AVENUE • CLEVELAND 4, OHIO

STONE AND WOOD GRABS • CLAMSHELL, DRAGLINE, CUSTOM-BUILT BUCKETS



Clyde Model W-3 full-revolving derrick

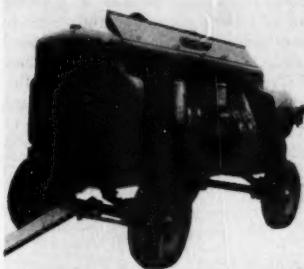
**Bucket Teeth**—*Parsons Co., New-ton, Iowa.* Tap-in bucket teeth are standard equipment on all trench-liners. Precision fit taper locks teeth firmly in place either on buckets or side-cutter bars, eliminating need for bolting or crimping edges to hold teeth in position. Tooth holders are integrally case with bucket lip. All trenchliners can be converted to use tap-in teeth by welding adapters to buckets. Teeth are made of alloy steel and heat-treated. They need not be reversed, being designed to retain sharp point by constant use until worn down to clearance.



Parsons tap-in bucket teeth

**NEW EQUIPMENT • MATERIALS**

**Compressor**—The Jaeger Machine Co., 528 Dublin Ave., Columbus 16, Ohio. Model 365 air compressor, rated at 365 cu. ft. per minute at 100 lbs. per sq. in. pressure, has 165 h.p. Model HRBI-600 Cummins diesel engine for power plant. Engine operating speed of diesel-compressor unit is 1,240 r.p.m. Compressor and engine are mounted on structurally welded main frames. Heavy-duty wagon has "auto-steer" front axle and can be hauled at 35 m.p.h. Rubber-tired or steel wheels or skid mountings are available. Length of rubber-tired unit is 12' 3"; width, 5' 10½"; height, 6' 9"; weight, 8,500 lbs. Engine is 6-cylinder full diesel with displacement of 743 cu. ins., compression ratio of 15.5 to 1, maximum rated r.p.m. of 1,800.



**Jaeger Model 365 air compressor**

**Atom Bomb-Resistant Glass**—Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh. Window of glass-plastic laminate, known as "Flexseal Bomb Glass," is said to eliminate dangers of flying glass in explosion areas. Flexseal bomb window will resist normal atmospheric pressures because of special properties incorporated in its design. When these are exceeded by bomb blast or pressure wave, window will open automatically by folding about its edges, releasing pressure and preventing window frame from being blown in. Window consists of 3 layers laminated into single unit. Outer layer is sheet of glass, middle layer a partially segmented sheet of polyvinyl butyral plastic and inner layer consists of 4 triangularly shaped pieces of glass, central area edges of which register with segmented edges of plastic. Plastic layer extends beyond glass edges and is bolted to window frame to serve as hinges, thereby permitting 4 segments to open like doors when outer plate of glass is broken.



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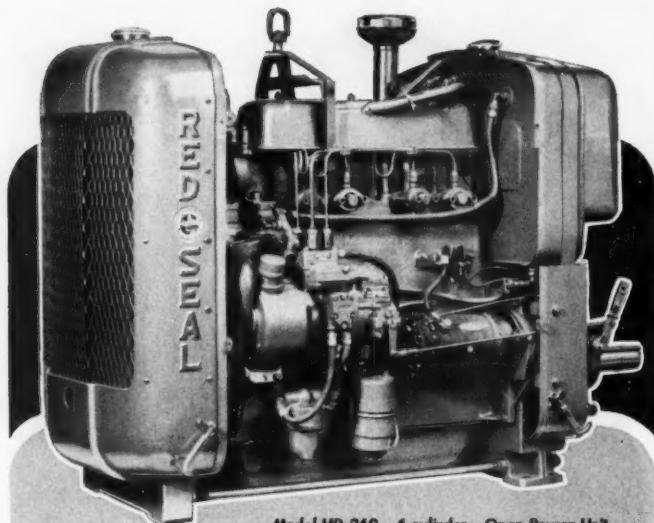


Employers Mutuals writes: Workmen's Compensation—Public Liability—Automobile—Group Health and Accident—Burglary—Plate Glass—Fidelity Bonds—and other casualty insurance. Fire—Extended Coverage—Inland Marine—and allied lines. All policies are nonassessable.

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**Model HD-260—4-cylinder—Open Power Unit.**  
25 to 50 shaft horsepower for intermittent duty.  
20 to 40 shaft horsepower for continuous duty.

# CONTINENTAL RED SEAL ENGINES COST ...Less to Run... Less to Maintain

PARTS AND SERVICE  
EVERYWHERE

YOU CAN PLACE FULL CONFIDENCE IN  
THE PRODUCT OF THE MANUFACTURER  
WHO HAS CHOSEN CONTINENTAL RED  
SEAL AS THE HEART OF HIS MACHINE



**Continental Motors Corporation**  
MUSKEGON, MICHIGAN

## NEW EQUIPMENT • MATERIALS

**Wall Coating**—Truscon Laboratories, 1700 Caniff Ave., Detroit 11. "Paratex" wall coating is rubber-base one-coat interior wall-and-ceiling soft matte finish. It is resistant to alkali, shows no "dead spots" from lime in plaster or because of variations in porosity of surfaces. Unpainted walls and ceilings require no size. It is applied with brush, roller or spray.

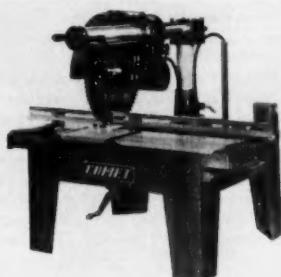
**Truck Mixer**—Transmission and Gear Co., Dearborn, Mich. New truck mixer unit, "Transomixer," features permanently leak-proof seal between hopper and mixing drum. It is equipped with "Transo" direct drive which eliminates sprockets, drive chains and ring gears. It has planetary type transmission. All clutches run in oil and are spring-loaded for self-adjustment. It has 2 starting and discharge speeds and built-in water pump has separate spring-loaded clutch. Mixer is built to specifications of Truck Mixer Manufacturers' Bureau. Both  $3\frac{1}{2}$  and  $4\frac{1}{2}$  cu. yd. sizes are in production.



Transmission and Gear Co.'s  
"Transomixer"

**Loader**—Lull Manufacturing Co., 3612 E. 44th St., Minneapolis 6. Model 3-B "Shovelloader" is built exclusively for use with Case VAI industrial tractor. Loader is designed to permit installation of Case VAI-5 mower attachment without interfering with operation of loader or mower. Bucket is controlled by parallelogram mechanism which automatically keeps bucket level while raising. Bucket can also be controlled independently. Loader is equipped with Lull precision-built hydraulic pump and "Lifetime" pistons and rings in all hydraulic cylinders. Alternate interchangeable loader attachments available are  $\frac{3}{8}$ -yd. material bucket,  $\frac{1}{2}$ -yd. loose material bucket,  $\frac{3}{4}$ -1 yd. coal or snow bucket, bulldozer, lifting crane, fork lift and motor-driven sweepers.

**Saw**—*Consolidated Machinery & Supply Co., 2031 Santa Fe Ave., Los Angeles 21.* Radial arm saw will cut off or miter construction timbers up to 17" x 17". Known as "Comet Timber Cutter," it is available in 3 sizes with 7½ or 10 h.p., 1,800 or 1,200 r.p.m., 220/440 volt motors that swing blades up to 44" in diameter. Saw assembly is mounted on rigid arm of



Consolidated Machinery & Supply Co.'s  
"Comet Timber Cutter"

hardened steel tubing supported by adjustable steel column. Eight ball-bearing rollers allow saw to move forward and backward on milled tracks in arm. Adjustment for depth of cut is made through screw gear device which raises or lowers column. Adjustment for miter is made by rotating column to desired angle. Width of cut-off is controlled by manually operated chain drive attached to saw assembly. Cutter is mounted on heavy structural steel table with wooden top. Roller table and adjustable steel back fence are available.

**Floating and Finishing Machine**—*Whiteman Manufacturing Co., 3249 Casitas Ave., Los Angeles 39.* Model C concrete floating and finishing machine has 5 rotating new type universal trowels that can be used for both floating and finishing by simple adjustment of pitch. Trowel pitch can be changed while machine is in motion. Stationary guard ring encircling machine permits finishing within 1½" of walls, columns, etc. Machine is

powered by 6 h.p., 4-cycle gas engine. Weight has been increased 20 per cent and double-groove clutch with 2 belts increases trowel speed 25 per cent.

**Tractor Improvements**—*Caterpillar Tractor Co., Peoria 8, Ill.* Complete muffler group is offered for new diesel DW20 and DW21 tractors. Attachment will reduce engine exhaust noise. . . . New controls for D4 tractor equipped with HT4 Traxcavator match higher seat that gives better view of dig, lift, carry, dump and dozer operations. Revised design allows greater length without interference for gearshift, flywheel clutch and steering clutch levers.

**Track Link Resurfacing**—*Caterpillar* offers weld-on plate for resurfacing track links worn too deeply for successful use of weld overlays. Applied to D7 and D8 tractors, new method makes it possible to resurface track links worn in excess of  $\frac{3}{8}$ ".

## "BERG" CONCRETE SURFACERS



"Berg" Concrete Surfacers are extensively used for surfacing and finishing applications on all types of concrete construction.

Various interchangeable Heads and Attachments are available for grinding, wire brushing, sanding and polishing applications.

**THE CONCRETE  
SURFACING MACHINERY CO.**  
CINCINNATI 32, OHIO

With more grips  
than a wrestler  
AND  
**NO HOLDS BARRED**



A wrestler with exclusive right to use unbreakable holds would win every bout.

A similar advantage, responsible for its unequalled performance, is a feature of the Owen Grapple.

Its ingenious Patented principle of operation enables each tine, or prong, to dig in and grip independently of the other tines-to grasp several rocks of varying size or hold in its unbreakable grip stone of tremendous size and fantastic shapes that could not possibly be handled by grapples of conventional design.

Get the Owen Grapple bulletin which proves these strong statements with many varied and interesting photos.



## Owen Buckets and Grapples

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Branches

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**Pumps**—*Ingersoll-Rand Co., 11 Broadway, New York 4.* New line of self-priming "Motorpumps" are intended for applications under suction lift where presence of air or vapor makes it impractical to use conventional centrifugal pumps. "Motor-pump" recirculates liquid trapped in casing. Pump impeller discharges through 2 passages into discharge chamber. During priming upper passage discharges mixture of vapor and liquid into discharge chamber. Here vapor separates from liquid and passes out discharge pipe. Remaining liquid re-enters impeller through lower passage to mix with more vapor drawn in from suction pipe which is separated from liquid in same manner. When suction pipe is filled with liquid and pump is primed, flow through lower passage reverses and both passages act as normal pump discharges. Pumps are built in sizes from  $\frac{1}{4}$  to 25 h.p., with capacities up to 800 g.p.m. and head up to 180'.

**Drills**—*Ingersoll-Rand* announces new series of small light-weight port-

able air drills known as OA and OB "Multi-Vane" drills, available in several different speeds for work up to  $\frac{1}{4}$ " capacity. Features of drills are: one-piece housing; re-designed 5-vane air motor; built-in automatic lubricator; throttle valve designed to eliminate air leakage; specially designed muffler with adjustable exhaust deflector permitting air to be exhausted in any direction; palm-fitting handles. Attachments, both straight and angle types, are available to adapt tools to reaming, tapping, wire brushing, sanding, screw-driving, nut-running and close-quarter drilling.

**Lubricator**—*The Rucker Co., 4228 Hollis St., Oakland, Calif.* No. 2 Arnold lubricator, with  $\frac{1}{2}$ -pt. capacity, for lubricating pneumatic tools is made of light-weight alloy. It is placed in air line and supplies flow of "oiled air" to working parts of tool. Adjustable feeder enables operator to adjust oil flow. Oil may be added under line pressure. Model 2 is 7" long,  $3\frac{1}{2}$ " wide and high and weighs 32 oz.

**Saw Blade**—*Clark & Sawyer, Inc., 602 Mateo St., Los Angeles 21.* "Squared-Circle" saw blade is actually square with series of teeth located at each corner of square. Absence of teeth along sides of square reduces friction during cutting operation. Manufacturer states that it requires less power to operate than conventional blade.

**Form Panel**—*Douglas Fir Plywood Assn., Tacoma 2, Wash.* Re-usable concrete form panel called "Plyron" combines backbone of plywood with smooth tough surfaces of hardboard. Hardboard, made by compressing wood fibers into thin hard sheet of uniform density and smoothness, provides wear-resistant and easily paintable surface. Plywood inner construction makes panel puncture-proof, rigid and dimensionally stable. Combination panel is split-proof and relatively light-weight. It is permanently bonded with same moisture-resistant glues used in "Plyform," concrete form grade of Douglas fir plywood.



### Only White Vibrators Have All These Features

which have made them successful all over the world.

- All Flexible Drive Sections are Interchangeable.  
No special sections, or expensive extra couplings needed.  
Each casing has ball bearing connector.
- No Limit to Length of Flexible Drive.  
Each driving core has slip joint which does not separate in service. Prevents stretching.
- All Vibrator Heads are Interchangeable.  
Can be put directly on any drive section. Can be opened for repairs. Double row ball bearings.
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No special drive needed. For wet and dry grinding.
- Standard Power Units.  
Gasoline engines or electric motors which can be serviced almost anywhere. Swivel base. Barrows.
- Minimum of Repair Parts Needed.  
One spare driving core is ample. Either 7' or 12'.

Write for circular and name of nearest dealer.

**Elkhart White Mfg. Co. Indiana**

This MODERN School Cost Only  
**59½¢ PER CUBIC FOOT**



B. Russ Minter—Architect

### Using Smooth Ceilings System

Now more than ever, School Boards are having to trim their building budgets. By using the Smooth Ceilings System of Flat Slab Construction, you can cut your cost estimates to an unbelievably low figure—while gaining the strength and flexibility essential to a modern, completely functional structure.

The final cost of the school shown above, recently completed at Mount Savage, Maryland, demonstrates the outstanding economies possible through use of the Smooth Ceilings System. Completely fireproof, this building has tile wainscots, plastered walls and acoustical ceilings throughout.

Get the facts on the Smooth Ceilings System, Today!



**GRILLAGE**  
used with reinforced-concrete columns.



**GRILLAGE**  
used with structural-steel or steel-pipe columns.

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# BLADES For Snow and Ice Removal

FOR ALL MAKES AND  
MODELS OF SNOW PLOWS

Made of specially developed  
steel to withstand severe  
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Various widths, lengths, thicknesses—flat, curved, standard or special—machined ready  
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SHUNK SAW-TOOTH  
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Amazingly effective. Thoroughly breaks up and removes heavy, slippery ice and snow formations. Replaces all types of snow plow blades or maintenance units. Write for Bulletin and name of nearest Distributor.



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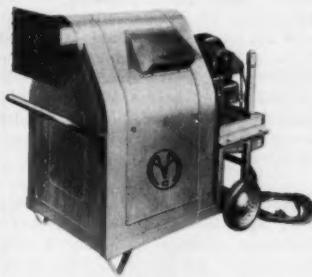
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BOOK DEPARTMENT  
MUNSEY BUILDING, WASHINGTON 4, D. C.

## NEW EQUIPMENT • MATERIALS

**Heater**—Master Vibrator Co., 105 Davis Ave., Dayton 1, Ohio. "Hot-R-Nell" space heater has 200,000 B.T.U. output per hour. Hot air output is about 10,000 and 12,000 c.f.m. and air is directed downward toward floor by special louvers. Heater burns kerosene or No. 1 or No. 2 fuel oil at rate of about 1½ gals. per hour. Recommended for general heating of working areas and thawing of material and equipment, heater provides instant heat as it requires no warm-up period. Burner unit is approved by Underwriters Laboratories and entire heater has been tested and approved for general use in ventilated area by leading testing laboratory. It is mounted on rubber-tired wheels and weighs 265 lbs. It is provided with automatic shut-off. Thermostatic controls are available extra.



Master Vibrator's "Hot-R-Nell" space heater

**Steel Cable Conveyor Belting Splicing**—B. F. Goodrich Co., Akron, Ohio. New method of splicing steel cable conveyor belting places all cables under equal tension during vulcanization so that each cable carries its share of load in finished splice. To make splice, cable ends are cut in staggered pattern. Small tubular connectors are placed over butted ends. Connectors are given light crimping. Partially made splice is then stressed to even lengths of cables, and connectors are given final crimping to lock them to cables. Rubber and fabric removed for splice are then rebuilt around cables. Splice is cured under tension with conventional vulcanizer. Splice can be made in field as well as at factory. Only special tools needed are crimping device for squeezing connectors to anchor cable ends, and special scraping tool to remove rubber from cables.

# AMERICAN TUBULAR



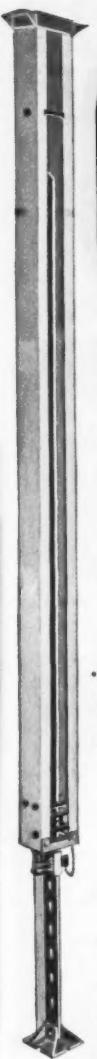
Here's really more for your money in a panel-type tower. Lightweight tubular steel quick to erect (especially in confined places)—is completely assembled with only 11 simplified component parts. Because it's built out of pre-fabricated panels with integral notch locking mechanism, it requires no bolts or nuts for braces and girts. Available with material platform or concrete bucket and hopper (as shown).

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840 North St., ZELIENOPLE, PA.

Division of UNIVERSAL MANUFACTURING CORP.



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**because . . .**

- ★ **LIGHTER**  
10 to 15 lbs.
- ★ **SAFER**  
Have greater load capacity
- ★ **FASTER**  
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- ★ **COMPLETE**  
Scab, Tee-head, and Extension allow for every type of use

Try these shores on your next job. See for yourself . . . you'll be convinced that Symons Shores are FIRST CHOICE because of the savings they will mean to you in time and money.

### Symons Column Clamps Save Money on Every Job



- ★ **SIMPLE CONSTRUCTION**  
Only two units—both alike, no loose parts
- ★ **SIMPLE TO APPLY**  
Require only a hammer, and are completely adjustable
- ★ **SQUARE COLUMNS**  
Automatically and accurately

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### NEW EQUIPMENT • MATERIALS

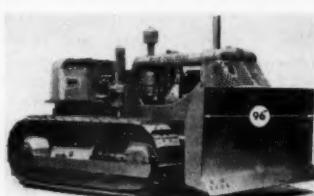


#### Hoist-Binder—

*Coffing Hoist Co., 800 Walter St., Danville, Ill.* Load binder works on ratchet hoist principle, taking up or slackening off load chain any amount up to full 20 $\frac{1}{2}$ ", or more if longer chain is used in binder. If load settles in transit, binder is tightened without necessity of releasing entire load to take new "grab." Full

strokes can be used for rapid take-up; half strokes permit minute adjustments. Binder chain may be pulled freely through ratchet when not under load. Binding and slackening off are by means of handle only. Handle will not fly up under load. It may be removed to prevent tampering. When handle is out, load cannot be released. Handle bends before binder can be loaded beyond safe limits. Binder weighs 10 lbs. and will exert pull of 3,000 lbs.

**Bulldozer**—*Baker Manufacturing Co., Springfield, Ill.* No-pushbeam bulldozer, Model 9-X, mounts 8' wide blade on 70-drawbar h.p. 9-ton Allis-Chalmers HD-9 tractor. Narrower blade has approximately same total blade area and capacity as 9'6" model. Dozer frame and tractor frame are bolted together as integral unit, so that tractor frame itself becomes push beam. Tractor-dozer is raised and lowered as integral unit by double-acting hydraulic cylinders connecting to truck frame through new lifting mechanism. In mounting 9-X, front spring and saddle are removed and spring pads are replaced by special brackets to which lifting mechanism is attached. Blade, with positive, instantaneous action up and down, has



Baker no-pushbeam bulldozer

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**SURVEYS**                    **VALUATIONS**  
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maximum rise of 37" and drop below ground of 13". Center of gravity of 9-X-mounted tractor remains back of second roller regardless of blade position. Complete details on machine are contained in Bulletin 896-A, available from all Baker and Allis-Chalmers dealers.

**Gravel Plants**—*Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13.* Two portable duplex plants, 24V and 25V, are identical except for size of jaw crusher, 25V having 10x36 jaw and 24V 10x24 jaw. Both models are equipped with 24"x16" double roll crusher and 3"x10', 3½-deck vibrating screen which provides 60 sq. ft. of effective sized material screening area. Both plants are fed with swivel-type field conveyor equipped with 24" mechanical (reciprocating plate) feeder. Delivery of sized material is handled by 24"x25' channel frame conveyor. Travel height is 12'6", over-all length (less feeder conveyor) is 40'. Both plants have 21' wheelbase. Travel weight of 25V, without power unit, is approximately 46,000 lbs.; of 24V, approximately 42,100 lbs. Plants are pneumatic tire-mounted on 12 10.00x20 tires, 3-axle, with equalizer between 2 rear axles.

## NEW LITERATURE

**Flat Slab Construction**—Smooth Ceilings System, 802 Metropolitan Life Bldg., Minneapolis 1. Theory, application and benefits of "Smooth Ceilings" system of flat slab construction are presented in illustrated bulletin. Installations described include office buildings, industrial buildings, hospitals, schools, garages and dormitories. Tables based on standard building code formulas are provided to assist in selecting slab thickness.

**Earth-Moving Equipment**—The Baker Manufacturing Co., 569 Standard Ave., Springfield, Ill. Hydraulic and cable-controlled earth-moving equipment to match Allis-Chalmers crawler tractors is described in Bulletin 895. Included are engine-mounted hydraulic-control bulldozers, gradebuilders and root rippers and 3 cable-control units. Specifications are listed, showing moldboard height and width, height of lift, depth of cut, degree of tilt, weight of blade and mounting and over-all length of tractor and blade, for all models.

**Tractor-Shovel**—The Frank G. Hough Co., 819 7th St., Libertyville, Ill. Model HY "Payloader" is presented in Catalog 208. Action views show machine handling materials in construction and other industries. Features of machine are described and illustrated and design details and complete specifications are included.

**Grader Operator's Handbook**—Caterpillar Tractor Co., Peoria 8, Ill. Motor Grader Operator's Handbook (Form 30228) presents in 4-color cartoon style operation of motor graders on various type jobs. Adjustments and techniques that apply to jobs ranging from high bank cuts to flat bottom ditching are explained.

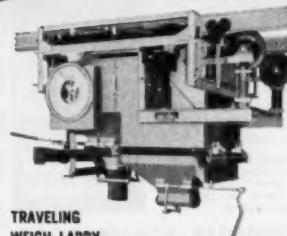
**Concrete Pipe**—Universal Concrete Pipe Co., 297 S. High St., Columbus, Ohio. Various sizes and shapes of reinforced concrete flat-base pipe for culverts, pedestrian underpasses, cattle passes, utility galleries and manholes are presented in illustrated bulletin. Chart and table describe pipe construction.

**Scraper**—LaPlant-Choate Manufacturing Co., Cedar Rapids, Iowa. Model TS-300 motor scraper is presented in Catalog A-1285. Construction features are described and illustrated. Individual photos of com-

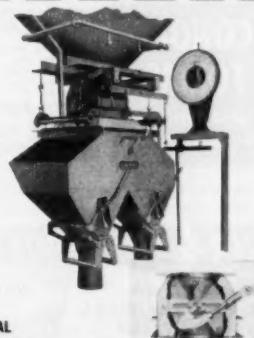


## BATCHING PLANTS

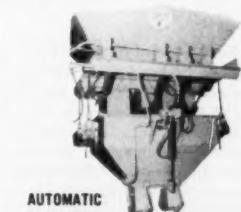
• Heltzel batchers exemplify the advanced engineering that is incorporated in all the details of Heltzel batching plants. Heltzel manufactures ten types of batchers specifically designed for faster, more accurate batching. Portable aggregate or cement plants, combination cement-aggregate plants, or circulating bulk cement plants—whichever you require, Heltzel affords you more value for each operating dollar.



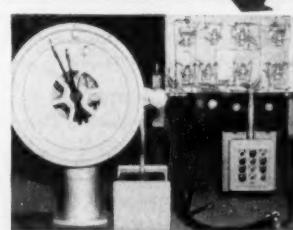
TRAVELING  
WEIGH LARRY



DUAL  
CEMENT  
BATCHER  
WITH TUBULAR CEMENT VALVE



AUTOMATIC  
BATCHER  
WITH CONTROLS

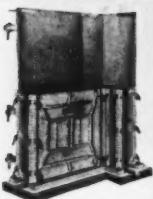


TRUCK  
MIXER  
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When placing concrete, use this nationwide Form Rental and Engineering Service to increase profits, reduce costs.

Standard units of Economy Forms fit most jobs. But where needed, special forms can be built to specification.

**ECONOMY FORMS CORP.**  
HOME OFFICE: DES MOINES, IOWA

**ECONOMY FORMS**

metal forms for  
concrete construction

time and  
material

- Foundations and Walls
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- Bridges, Culverts and Box Tunnels

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Springfield, Mass.  
Woburn, Mass.  
Decatur, Ga.  
Dallas, Texas  
Los Angeles, Calif.  
Denver, Colo.

## NEW LITERATURE

ponent parts are included. Center spread is devoted to large model shot of scraper and complete machine specifications.

**Floor Brick Installation**—*The Master Builders Co., Cleveland 3.* "Embeco" method of setting floor brick and heavy tile is described in bulletin, Form E-27. It shows how floors with joints down to  $\frac{1}{8}$ " can be installed by using "Embeco," flowable, non-shrink mortar. Complete specifications are given and job pictures are included.

**Welding Cables**—*Tweco Products Co., P. O. Box 666, Wichita 1, Kans.* No. 8 catalog illustrates and describes complete line of Tweco electrode holders, ground clamps, cable connectors, terminal connectors, cable splicers, mechanical and solder type cable lugs, carbon electrode holders and new "Lug-Set" block and punch for attaching solder type lugs to cables without solder. Information is included on care and maintenance of electric welding cables and connections.

**Aerial Surveys and Maps**—*Abrams Aerial Survey Corp., 606 E. Shiawassee St., Lansing 1, Mich.* Booklet, *Aerial Surveys and Maps from Photographs*, explains aerial photogrammetry, science of making measurements from photographs. Photogrammetric process is diagrammed, planes and cameras used in aerial photography and instruments used in laboratory processing are illustrated. Various maps and photographs available from aerial surveys are illustrated and explained, along with uses that can be made of each type.

**Steel Windows**—*Detroit Steel Products Co., 3143 Griffin St., Detroit 11.* *Fenestra Industrial Steel Windows* describes pivoted, commercial projected and security windows for industrial and commercial buildings. It provides engineering information about "Fenestra" industrial steel windows, including hot-dip galvanized and bonderized windows; shows construction features, methods of opera-

**REDUCE CONCRETE  
LABOR COSTS  
UP TO 60%**

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WORLD'S FOREMOST  
"SHAKEDOWN ARTIST"



The one-man Vibro-Plus Roll-gear Internal Vibrator will help you roll back rising labor costs and do a better job.

Available in electric, gas-engine or pneumatic-driven models delivering from 11,000 to 15,000 V.P.M. Exclusive patented features assure years of trouble-free operation.

Write for complete details and name of nearest distributor.

**VIBRO-PLUS**  
PRODUCTS, INC.

54-11 Queens Blvd., Woodside, L.I.

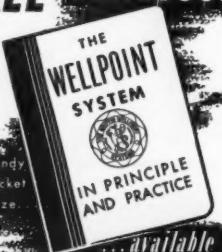
tion, installation instructions; and gives complete specifications and charts of sizes.

**Crushers**—*Smith Engineering Works, Milwaukee 12.* Bulletin 265-E presents "Telsmith" portable crushers. Pictured and described are jaw, gyratory, gyrasphere, intercone, double roll and portable crushers, and feeders, washing, screening and loading plants. Specifications are included.

**Trucks**—*Federal Motor Truck Co., Detroit 9.* Bulletin SA-170-20M presents line of heavy-duty motor trucks, including 6-wheelers. Special heavy-duty construction features are presented and specifications are given. Sections are included on Federal gasoline and diesel engines.

**Bins**—*Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13.* Storage bins and loading bins are covered in new pamphlet (Form 629). Sizes, specifications and applications are covered, together with types of bin gates available for discharging bins. Included are single- and multiple-compartment bins up to 45 yds. capacity.

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A rational method of construction for elevated express highways, heavy underpasses, underground garages, containers and ducts carrying liquids.

L. COFF, Consulting Engineer, 198 Broadway,  
New York 7, N.Y., Cortland 7-2753

## MANUFACTURERS' NOTES

**TERMITE DRILLS, INC.**, has moved to new and larger quarters at 99 N. Lotus Ave., Pasadena 8, Calif. This move is part of an expansion program undertaken recently. Another phase of the program is the appointment of Clark & Sawyer, Inc., Los Angeles, as sales representative for all states west of the Mississippi River and the Specialty Company, Lakeville, Conn., as representative in all territory east of the Mississippi.

Victor G. Pignolet has been appointed technical director of the **METAL LATH MANUFACTURERS ASSOCIATION**. He will have charge of an expanded program of research activities in building construction, including a stepped-up testing schedule for fireproofing of structural steel framing in buildings with metal lath, gypsum plaster and light-weight vermiculite and perlite aggregates.

**LINCOLN ELECTRIC** Co.'s executive and plant offices with their equipment have been moved to the company's new super-modern plant at 22801 St. Clair Ave., Cleveland. Work has begun on moving the electrode division, which will complete the transfer of all operations to the new plant.

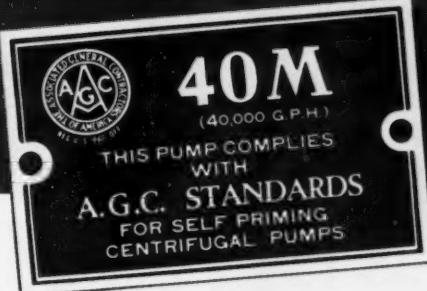
A one-million-dollar building expansion program to increase production facilities of the **DETROIT DIESEL ENGINE DIVISION** of General Motors is the eighth major expansion the division has made and adds almost 80,000 sq. ft. to the 1,000,000 sq. ft. now under cover. The division has attained a production figure of over 50,000,000 h.p. in 2-cycle diesel engines since 1938.

Full-scale testing of International trucks has begun at the Phoenix Proving Ground of **INTERNATIONAL HARVESTER CO.**, following completion of an extensive road construction program. The proving ground, comprising 6½ sq. mi. of rugged desert land, features a new 28', 7½-mile paved test track for trucks.

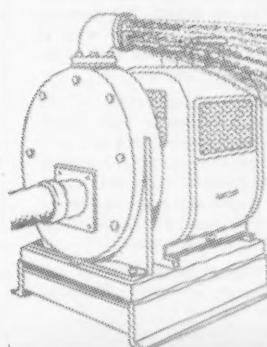
George T. Humphrey, Jr., has been appointed assistant general manager of the service sales division of **THE TIMKEN ROLLER BEARING CO.**

Work on the **SYMONS CLAMP & MFG. CO.**'s new 30,000 sq. ft. addition is being pushed to completion by Peter Hamlin Construction Co., general contractor. The new building, plus

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***This Plate appearing on your pump is your assurance of full performance --***



To assist and assure the contractor, the Pump Bureau, with approval of the A. G. C., has established certain basic standards of pump performance. Through the Pump Bureau these reliable pump manufacturers meet the standards in their products which are identified by the official A.G.C. Standards Plate.

Members of the pump bureau are competing for your business by continual improvement of design in the best American tradition of free enterprise. As developments in pump engineering improve performance of pumps, they may be upgraded by action of the A.G.C.

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Kansas City, Mo.

WORTHINGTON PUMP & MACH. CORP.  
Holyoke, Mass.

LEYMAN MFG. CORP.  
Cincinnati 2, Ohio

BARNES MANUFACTURING CO.  
Mansfield, Ohio

CANVER PUMP CO.  
Muscatine, Iowa

C. H. & E. MANUFACTURING CO.  
Milwaukee, Wisconsin

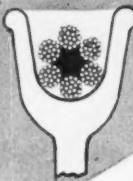
CHAIN BELT CO.  
Milwaukee, Wisconsin

CONSTRUCTION MACHINERY CO.  
Waterloo, Iowa

THE GORMAN-RUPP CO.  
Mansfield, Ohio

THE JAEDER MACHINE CO.  
Columbus, Ohio

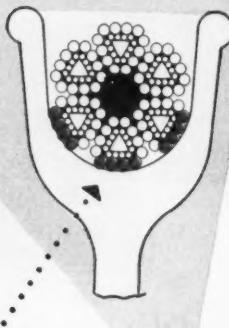
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**SPECIFY  
STRONGER - SAFER  
"HERCULES"  
FLATTENED STRAND**

- 10% extra strength
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- Smooth running
- Smooth wearing
- Easier to rig
- Extra safety
- Extra economy

**RED-STRAND  
quality**

**FLATTENED STRAND**

## **SPREADS THE LOAD FOUR WAYS**

"Hercules" Flattened Strand design spreads wear over four wires—not just one as in round strand. This compact outer surface greatly reduces wear in grooves of drums, sheaves and idlers. Tends to keep them smooth.

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Take advantage of the greater strength and economy of "Hercules" Flattened Strand Wire Rope.



# **LESCHEN WIRE ROPE**

Consult our Engineering Department for specific recommendations. **A. LESCHEN & SONS ROPE CO., 5909 Kennerly Ave., St. Louis 12, Missouri.** Distributors in all principal cities.

**MANUFACTURERS' NOTES**

new machinery, will enable Symons to increase their present production an estimated 110 per cent.

**Obituary**

C. L. Best, pioneer inventor and tractor builder, died September 22 at San Francisco, at the age of 73. One of the founders of Caterpillar Tractor Co., he was chairman of the board at the time of his death.

Guy E. Rogers, manager of standard building sales for the Blaw-Knox Division of Blaw-Knox Co., died suddenly of a heart attack in September. He had been with Blaw-Knox for 30 years.

**Statement of the Ownership, Management and Circulation Required by the Act of Congress of August 24, 1912, as Amended by the Acts of March 3, 1933, and July 2, 1946.**

**Or THE CONSTRUCTOR**, published monthly at Washington, D. C., for October 1, 1951.

1. The names and addresses of the publisher, editor, managing editor, and business manager, are:

Publisher: **THE CONSTRUCTOR, INC.**, 1227 Munsey Building, Washington 4, D. C.

Editor, H. E. Foreman, 1227 Munsey Building, Washington 4, D. C.

Managing Editor, William E. Woodruff, 1227 Munsey Building, Washington 4, D. C.

Business Manager, M. S. Beck, 1227 Munsey Building, Washington 4, D. C.

2. The owner is: (If owned by a corporation its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member must be given.)

**THE CONSTRUCTOR, INC.**, 1227 Munsey Building, Washington 4, D. C.

The Associated General Contractors of America, Inc., 1227 Munsey Bldg., Washington 4, D. C.

G. W. Maxon, president, Maxon Construction Co., Inc., Dayton, Ohio.

Arthur S. Horner, vice president, A. S. Horner Constr. Co., Denver, Colo.

William Muirhead, secretary-treasurer, Wm. Muirhead Construction Co., Durham, N. C.

3. The known bondholders, mortgagees, and other security holders owning or holding one per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. M. S. Beck, Business Manager.

Sworn to and subscribed before me this 28th day of September, 1951.

(SEAL) **ELEANOR B. MILLER.**  
(My commission expires Aug. 31, 1953.)

## ADVERTISERS' PRODUCTS

Manufacturers' addresses are listed on page 95

### **Aggregate (Light-weight)**

Great Lakes Carbon Corp.,  
Building Products Division

### **Air-Entraining Agents**

A. C. Horn Co.

### **Asphalt Plants (Portable)**

Barber-Greene Co.  
Iowa Mfg. Co.  
White Mfg. Co.

### **Asphalt Tile**

Coleman Floor Co.

### **Axes (Truck)**

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Cleveland Trencher Co.  
Harnischfeger Corp.  
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Heltzel Steel Form & Iron Co.  
C. S. Johnson Co.

### **Bearings (Anti-friction, Tapered Roller)**

Timken Roller Bearing Co.

### **Bins**

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Heltzel Steel Form & Iron Co.  
Iowa Mfg. Co.  
Irvington Form & Tank Corp.  
C. S. Johnson Co.

### **Bits (Detachable Drill)**

Ingersoll-Rand Co.  
New England Carbide Tool Co.  
Timken Roller Bearing Co.

### **Blades (Grader, Maintainer, Snow Plow, Bulldozer, Scarifier)**

Shunk Manufacturing Co.

### **Bridges**

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Armcoc Drainage & Metal Products

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Harnischfeger Corp.  
C. S. Johnson Co.  
Owen Bucket Co.  
Wellman Engineering Co.

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Heltzel Steel Form & Iron Co.  
Jaeger Machine Co.  
Owen Bucket Co.

### **Building Papers**

Sisalkraft Co.

### **Buildings (Steel)**

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American Bridge Co.  
Armcoc Drainage & Metal Products

### **Buildings (Steel)—Continued**

International Steel Co.  
Macomber, Inc.  
Smooth Ceilings System  
Truscon Steel Co.

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Clyde Iron Works

### **Carpet**

Coleman Floor Co.

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Smooth Ceilings System

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using rotary type  
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Drills holes  $\frac{3}{4}$ " dia. and up. Removable Cyclo-Center accessory allows precision locating and starting of hole without use of wooden template.

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SOFT and MEDIUM  
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Drills holes  $\frac{3}{16}$ " to 1" dia. up to 36" deep. Dust removing spiral flutes run from cutting edges to shank end.

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**Side or End Discharge. 11S  
two or four  
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**Timken bearings throughout.**

**Machined drum tracks, heavy-duty drum rollers mean better performance—longer life. Abrasion-resistant alloy discharge chute liners.**

**All steel cut sprockets and roller chain drive.**

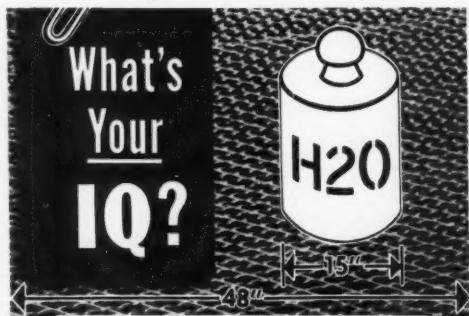
**Renewable drum liners.**

**Silent transmission.**

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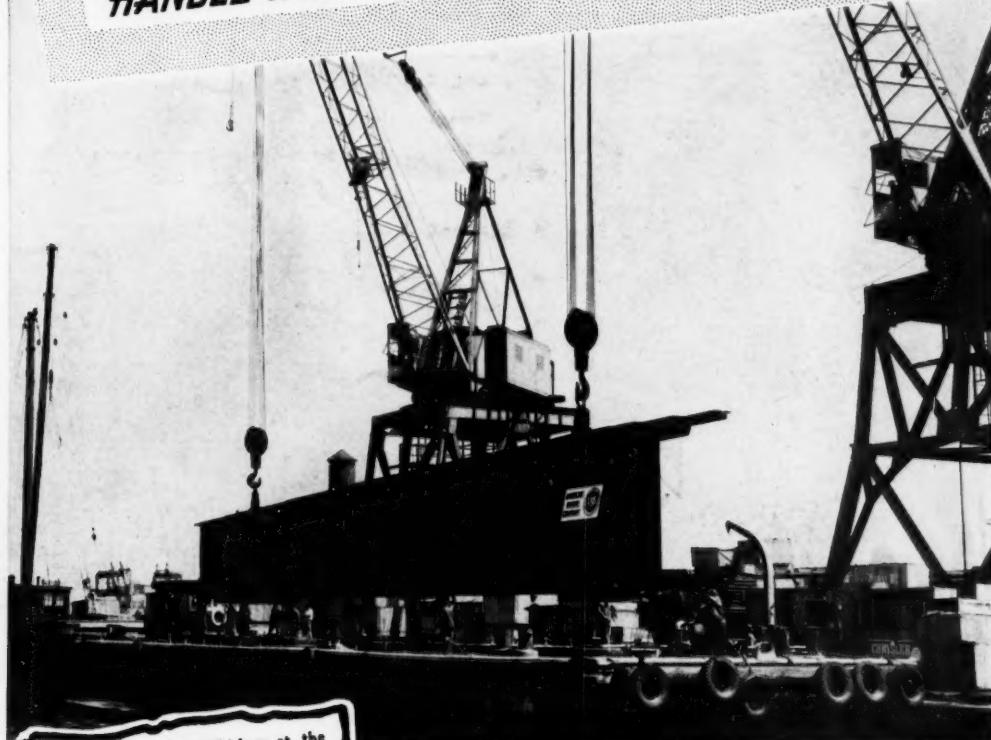


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